This is the 1st affidavit
of Ian Linkletter in this case
and it was made on 15 October 2020

No. S208730
Vancouver Registry

IN THE SUPREME COURT OF BRITISH COLUMBIA

BETWEEN:

PROCTORIO, INCORPORATED

PLAINTIFF

AND:

IAN LINKLETTER

DEFENDANT

AFFIDAVIT

I, **Ian Linkletter**, Learning Technology Specialist, of c/o 1512-808 Nelson Street, in the City of Vancouver, Province of British Columbia, AFFIRM THAT:

1.   I am the Defendant in this action and as such have personal knowledge of the facts and matters hereinafter deposed to, save and except where same are stated to be made on information and belief, and where so stated, I verily believe them to be true.

2.   I affirm this affidavit in support of an application to dismiss this action against me, under the *Protection of Public Participation Act.*

3.   In this affidavit, I will first discuss my background, how I came to be concerned about Proctorio, and why I was motivated to contribute to the ongoing public dialogue around the ethics of Proctorio and other academic surveillance software. Then, I will respond to the claims made against me by Proctorio. Finally, I will discuss the effect that Proctorio's lawsuit and its without notice *ex parte* injunction has had on me.

4.   In preparing this affidavit, I have reviewed the Affidavit of John Devoy sworn August 31, 2020 (the "Devoy Affidavit"), which was tendered by Proctorio to obtain its without notice *ex parte* injunction against me, before I was served with the notice of civil claim in this action. In this affidavit I will respond only to those parts of the Devoy Affidavit that are relevant to the present application.

A.   THE PUBLIC INTEREST IN PROCTORIO AND OTHER ACADEMIC SURVEILLANCE SOFTWARE

My background, education and work

5.   I hold a Bachelor of Arts from The Evergreen State College in Olympia, Washington, awarded in 2005, and a Master of Library and Information Science from The University of Western Ontario (now known as Western University) in London, Ontario, awarded in 2006.

6.   For the past thirteen years I have worked exclusively in the education technology field. A copy of my resume is attached as **Exhibit A**. A summary of my academic presentations is attached as **Exhibit B**.

7.   From 2007 to 2009, I worked for Fanshawe College in London, Ontario as an Educational Technologist. In this capacity I supported teaching staff in their use of learning technology to enhance teaching and learning.

8.   From 2010 to 2011, I worked for the British Columbia Institute of Technology in Burnaby, British Columbia as a Technical Support Liaison, providing similar services to teaching staff at that institution. I also supported students using learning technology in their studies.

9.   On October 10, 2011, I commenced employment as a User Support Specialist in the Faculty of Education of the University of British Columbia ("UBC") in Vancouver, British Columbia. In this position, I provided learning technology support to faculty engaged in online courses.

10.   In 2012, I was promoted to the position of Learning Technology Specialist. In this position I support faculty members who are engaged in the delivery of online courses. I help faculty select the most effective learning technologies, teach them how to use those technologies, and support them as they use the technologies to teach. For example, a faculty member authoring a new online

course could consult with me to evaluate different technologies for supporting communication. We would review their learning objectives and pedagogical intent, and then review the different tools available. Once they choose the tool(s) they wish to use, we would implement those tools in a way that maximizes the benefits based on all available evidence (research, student feedback, other faculty experiences). I would provide training to the instructor on using the tools and support them with any questions or issues that arise over the course of their teaching.

11.   I am fortunate to be able to express my values through my work as a member of the University. I believe in education as a social good, the pursuit of knowledge, and the importance of free inquiry and expression. I hold dearly my responsibility to protect students and ensure that the technology they are required to use is ethical. I take a "First, do no harm" approach to my work. I am especially interested in privacy and data use policies, and have been critical of for-profit education technology companies whose practices are inadequate.

My concern about academic surveillance software

12.   While I am generally a proponent of the appropriate use of learning technology, I am ethically committed to protection of student safety and privacy. Some technologies carry more risks than others, especially those that collect personal information from students. I have grown increasingly concerned about software that uses invasive surveillance techniques to monitor student behaviour online.

13.   I have supported online learning in the Faculty of Education at UBC for almost 9 years, and I have worked with hundreds of faculty and teaching staff in that time. Prior to the COVID-19 pandemic, I had no first-hand experience with academic surveillance software designed to record students and analyze their behaviour.

14.   When BC's universities suspended in-person instruction due to the COVID-19 pandemic, they dramatically increased the use of technology to enable remote teaching and academic continuity for students.

15.   Due to this transition to online learning, UBC expanded the use of Proctorio, an academic surveillance software product made by the plaintiff. Proctorio purports to ensure integrity during academic testing by monitoring and recording students while they write tests, processing these

recordings through algorithms that purport to detect "suspicious" activities, and flagging these activities to the instructor.

16.   Students began to express concerns online about technologies such as Proctorio , including on the two community websites I use the most: Twitter and Reddit. Attached as **Exhibit C** is a March 16, 2020 thread from the /r/ubc community on Reddit where students expressed concerns about the invasiveness of Proctorio. In this thread UBC students said Proctorio increased their stress and made them feel under suspicion.

17.   This thread raised my awareness of technologies such as Proctorio and made me realize the risks of this technology were not well understood. I, for one, did not understand them.

18.   I began to research the impact of academic surveillance software on students. One important article on this topic is "Our Bodies Encoded: Algorithmic Test Proctoring in Higher Education" by Shea Swauger, published in the peer-reviewed journal *Hybrid Pedagogy* on April 2, 2020 at https://hybridpedagogy.org/our-bodies-encoded-algorithmic-test-proctoring-in-higher-education/ . Attached as **Exhibit D** is a copy of this article.

19.   My conduct in this matter is based on my belief that technology must be transparent to be ethical. Students have the right to know what information is being collected about them, and for what purpose, particularly when it is going to be used to assess their academic honesty. Proctorio uses an opaque proprietary system to measure "behaviour", calculate "abnormalities", and then assign a "suspicion level" to each student. I am concerned that misuse or misunderstanding of this technology could lead to academic discipline for honest students, and unnecessary stress for everyone.

20.   I continued to read student discussions of Proctorio on Reddit and other social media sites. As I learned more about academic surveillance software, several related concerns arose. I became concerned that it causes undue levels of anxiety for test-takers, that it presents barriers to students with disabilities, and that the software's algorithms may perpetuate racist and sexist biases. It was this concern that provided the context of my actions.

Anxiety

21.   A 2018 study by Professors Tammy Kolski and Jennifer Weible titled "Examining the Relationship Between Student Test Anxiety and Webcam Based Exam Proctoring" found connections between various observed behaviours and test anxiety. These behaviours, which include eye movement and head movement, are among those measured by Proctorio and used to calculate a student's suspicion level. Attached as **Exhibit E** is a copy of this article downloaded from https://www.westga.edu/~distance/ojdla/fall213/kolski_weible213.html .

22.   A 2019 study by Professors Daniel Woldeab and Thomas Brothen titled "21st Century Assessment: Online Proctoring, Test Anxiety, and Student Performance" investigated the use of academic surveillance technology on test-taker anxiety. It concludes in part that "the general wariness of technology combined with students' fear of testing makes online proctored exams very difficult for some students, in particular those who already exhibit trace anxiety." Attached as **Exhibit F** is a copy of this article downloaded from http://ijede.ca/index.php/jde/article/view/1106/1727 .

Barriers to students with disabilities

23.   Proctorio and other academic surveillance software is known to present barriers to students with disabilities. For example, accessibility technologies such as screen readers are either completely incompatible with Proctorio, or may cause the system to flag users of these technologies as abnormal or suspicious.

24.   Attached as **Exhibit G** is a document titled "Accessibility concerns in Proctorio," published by the University of Missouri at https://teachingtools.umsystem.edu/support/solutions/articles/11000085024-accessibility-concerns-in-proctorio .

25.   Attached as **Exhibit H** is a document titled "Proctorio," published by the University of Colorado at Boulder at https://oit.colorado.edu/services/teaching-learning-applications/proctorio . Among other things, it says:

> "Proctorio is not accessible to individuals who are blind, low vision, use the keyboard only, and some individuals who have difficulty with mobility. These students should be offered an alternative testing environment. These students would face insurmountable problems if

forced to use Proctorio, specifically with being able to complete Proctorio's System Diagnostic Test and pre-check processes."

26.　　In "Our Bodies Encoded", author Shea Swauger wrote:

Students with certain medical conditions such as neuromuscular disorders or spinal injuries that prohibit them from sitting for long periods of time, those who need to use the restroom frequently, or anyone who needs to administer medication during a test will be flagged.

and

When eye-tracking is used, students with visual impairments such as blindness or nystagmus or students who identify as autistic or neuro-atypical may be flagged. Even common test-taking behaviors such as reading the question out loud, listening to music, or behaviors such as hyperactivity associated with ADHD can be flagged.

Discrimination

27.　　Another concern about Proctorio and other academic surveillance software is that the technology it uses carries racist and sexist biases.

28.　　In her January 2019 article, "Emotion-reading tech fails the racial bias test," Professor Lauren Rhue discusses her research into facial recognition software (not Proctorio) that, in her view, exhibited racial bias. Attached as **Exhibit I** is a copy of this article downloaded from https://theconversation.com/emotion-reading-tech-fails-the-racial-bias-test-108404 .

29.　　Universities that use Proctorio have acknowledged that racial bias may be an issue. Attached as **Exhibit J** is a document titled "Proctorio – Privacy Information," published by the University of Colorado at Boulder at https://oit.colorado.edu/services/teaching-learning-applications/proctorio/privacy-information . Among other things, it says that "There is some evidence that algorithm-based facial detection software is biased towards white, male users."

30.　　In "Our Bodies Encoded", author Shea Swauger wrote that "A Black student at my university reported being unable to use Proctorio because the system had trouble detecting their face, but could detect the faces of their white peers."

Public interest in academic surveillance technologies

31.   I am not alone in my concern about the use of academic surveillance technologies. This has been a topic of public interest and concern for several years, although public interest has grown with the increased use of Proctorio during the COVID-19 pandemic.

32.   Several articles illustrate the public interest in this topic:

   a.   "This anti-cheating app brings Big Brother to a campus near you" by Jackson Cantrell, published September 23, 2015 at http://blogdailyherald.com/2015/09/23/anti-cheating-app-takes-big-brother-campus-near/ . Attached as **Exhibit K** is a copy of this article.

   b.   "Online Exam Proctoring Catches Cheaters, Raises Concerns" by Jean Dimea, published May 10, 2017 at https://www.insidehighered.com/digital-learning/article/2017/05/10/online-exam-proctoring-catches-cheaters-raises-concerns . Attached as **Exhibit L** is a copy of this article.

   c.   "Mass school closures in the wake of the coronavirus are driving a new wave of student surveillance" by Drew Harwell, published April 1, 2020 at https://www.washingtonpost.com/technology/2020/04/01/online-proctoring-college-exams-coronavirus/. Attached as **Exhibit M** is a copy of this article.

   d.   "Unfeeling AI and Assessment" by Lee Skallerup Besette, published April 8, 2020 at https://www.insidehighered.com/blogs/university-venus/unfeeling-ai-and-assessment . Attached as **Exhibit N** is a copy of this article. A response attributed to "The Proctorio Team" was published April 30, 2020 at https://www.insidehighered.com/blogs/university-venus/response-proctorio . Attached as **Exhibit O** is a copy of the response.

   e.   "Compassion over suspicion: UW should not use exam monitoring software" by Marium Raza, published April 24, 2020 at www.dailyuw.com/opinion/article_0ad544ac-85ea-11ea-96b5-7f1ff1e9de2a.html . Attached as **Exhibit P** is a copy of this article.

f.   "Keeping Online Testing Honest? Or an Orwellian Overreach" by Shawn Hubler, published May 10, 2020 at https://www.nytimes.com/2020/05/10/us/online-testing-cheating-universities-coronavirus.html . Attached as **Exhibit Q** is a copy of this article.

g.   "Proctoring Apps Subject Students to Unnecessary Surveillance" by Jason Kelley and Lindsay Oliver, published August 20, 2020 at https://www.eff.org/deeplinks/2020/08/proctoring-apps-subject-students-unnecessary-surveillance . Attached as **Exhibit R** is a copy of this article.

h.   "Online school means online tests, along with computerized surveillance" by Rachel Metz, published August 29, 2020 at https://www.cnn.com/2020/08/29/tech/online-school-test-surveillance/index.html . Attached as **Exhibit S** is a copy of this article.

i.   "Students Are Rebelling Against Eye-Tracking Exam Surveillance Tools" by Todd Feathers and Janus Rose, published September 24, 2020 at https://www.vice.com/en_us/article/n7wxvd/students-are-rebelling-against-eye-tracking-exam-surveillance-tools . Attached as **Exhibit T** is a copy of this article.

j.   "How It Feels When Software Watches You Take Tests" by Anushka Patil and Jonah Engel Bromwich, published September 29, 2020 at https://www.nytimes.com/2020/09/29/style/testing-schools-proctorio.html . Attached as **Exhibit U** is a copy of this article.

33.   Since Proctorio started this lawsuit against me, public interest in academic surveillance software in general, and Proctorio in particular, has continued to increase.

34.   Attached as **Exhibit V** is an open letter in my defence that was posted at https://blog.communityofpraxis.ca/2020/09/03/in-defence-of-ian-linkletter/ .

35.   On September 25, 2020, the Electronic Frontier Foundation published an article called "Students Are Pushing Back Against Proctoring Surveillance Apps". It reports on dozens of student petitions against proctoring surveillance, including active petitions specifically against the

use of Proctorio by students at California State University Fullerton, University of Colorado Boulder, Miami University, and University of Tennessee Chattanooga. Attached as **Exhibit W** is a copy of this article downloaded from https://www.eff.org/deeplinks/2020/09/students-are-pushing-back-against-proctoring-surveillance-apps .

36.   Another recent article about student protests against the use of Proctorio (and technologies like it) is titled "As college resumes, students protest against invasive proctoring apps" and published on September 26, 2020 by DigitalTrends. Attached as **Exhibit X** is a copy of this article downloaded from https://www.digitaltrends.com/news/cuny-brooklyn-baruch-college-proctoring-apps-student-surveillance-proctorio/ .

37.   Students at UBC have started a petition on change.org calling for UBC to end its relationship with Proctorio. Attached as **Exhibit Y** is a copy of this petition downloaded from https://www.change.org/p/ainsley-carry-ubc-ca-ubc-students-reject-proctorio-s-invasive-technology-unethical-practices-defundproctorio .

38.   On October 1, 2020, UBC students sent an open letter to a number of UBC administrators calling for an end to UBC's relationship with Proctorio and a number of related measures. The letter claims to have 142 signatories as of October 6. Attached as **Exhibit Z** is a copy of this letter downloaded   from   https://docs.google.com/document/d/1117835S2RQkQN_-Ij8nZ2qEzCKgNWqle-O70nKdzpaA/edit .

The June 2020 Proctorio incident at UBC

39.   In his Affidavit, Mr. Devoy purports to describe at paras. 53-61 a series of events "so that the Court has a complete picture of the contacts between Proctorio and Mr. Linkletter" (para. 53). In fact, Mr. Devoy paints a picture that is far less than complete.

40.   Mr. Devoy describes (at para. 55) an incident on June 26, 2020 where a student shared a partial screenshot from a private conversation with a Proctorio support agent, which suggested that the support agent had not provided timely or effective support during a timed exam.

41.   What the Devoy Affidavit does not make clear is that in response to this student's post, the CEO of Proctorio, Mike Olsen (using the alias "artfulhacker"), posted more of the transcript of the

student's private conversation with the Proctorio support agent. He prefaced the transcript with this statement:

> If you're gonna lie bro… don't do it when the company clearly has an entire transcript of your conversation. You even gave Roy a positive emoji after he helped you… shame on you.

> Here is the transcript (because I can't confirm you are the person who had the chat we will mask all your messages to Roy for privacy):

42. In my view it was wholly inappropriate for Proctorio to do this, even if it believed that the student had been misleading in his or her original Reddit post. This demonstrated the company monitored online student discussions on Reddit and was willing to use data in its possession to publicly discredit students. It left me uncertain and uneasy over what (if any) personal information the CEO could and could not access from his location in the United States.

43. Because of my concern at this conduct, I tweeted a screenshot of Proctorio's Reddit post on June 26, 2020 at 11:21pm. Attached as **Exhibit AA** is a screenshot of this tweet, captured September 27, 2020 from https://twitter.com/Linkletter/status/1276762580015435776 .

44. Proctorio subsequently apologized for posting the transcript of the student's conversation with its support agent. Proctorio's CEO, again posting using his online alias "artfulhacker", wrote "I removed the transcript, you don't need to prove anything, apologies for posting it." Attached as **Exhibit AB** is a PDF of a June 27 2020 tweet where I posted a screenshot of this apology. Attached as **Exhibit AC** is an annotated display of the Proctorio-related screenshots I posted in this tweet.

45. This incident became a subject of controversy on campus. Attached as **Exhibit AD** is "Proctorio CEO releases student's chat logs, sparking renewed privacy concerns", an article by Shereen Lee, published June 30, 2020 by *The Ubyssey*, the student newspaper of UBC, at https://www.ubyssey.ca/news/proctorio-chat-logs/ .

46. Attached as **Exhibit AE** is an article titled "CEO of exam monitoring software Proctorio apologises for posting student's chat logs on Reddit" by Naaman Zhou for *The Guardian*, published July 1, 2020 at https://www.theguardian.com/australia-news/2020/jul/01/ceo-of-exam-monitoring-software-proctorio-apologises-for-posting-students-chat-logs-on-reddit .

47. On July 3, 2020, UBC's Office of the Provost published the "Letter to the community regarding Proctorio" which is Exhibit F to the Devoy Affidavit.

48. On July 3, 2020, the Alma Mater Society (UBC's student union) and a number of undergraduate student societies wrote an open letter to UBC recommending, among other things, that "UBC must end its relationship with Proctorio and other invasive, algorithmic remote test proctoring software." Attached as **Exhibit AF** is a copy of this letter as published at https://www.ams.ubc.ca/news/open-letter-regarding-the-usage-of-proctorio/ .

49. Partly in response to growing community concerns, UBC convened a working group to develop a set of principles for the use of what it calls "remote invigilation tools." The working group was led by the Office of the Provost at UBC Vancouver and included faculty and students.

50. Attached as **Exhibit AG** is the document produced by the working group, titled "Principles for appropriate use of remote invigilation tools." It acknowledges student concerns about several aspects of Proctorio's operations:

   a. "Remote invigilation tools can lead to added stress for students beyond what they might otherwise experience in an in-person exam, which can affect their performance."

   b. "Having cameras (and sometimes microphones) on during an exam, while students are in their living spaces, also raises privacy concerns since instructors and other students wouldn't otherwise be able to see these spaces or hear what is happening in them."

   c. "Algorithmic remote proctoring software may disproportionately flag students with disabilities and health needs and students with dependents."

   d. "There may be access issues for students in rural communities with limited internet access, and students of ethnic backgrounds that differ from the data set the algorithm is based off of may face difficulties entering exams."

e. "Many students are understandably worried that they will be flagged for behaviours that appear suspicious but are actually incidental to writing the exam or out of their conscious control."

51. Attached as **Exhibit AH** is a UBC document titled "Preparing to Teach in Fall 2020: Guiding Principles," published at https://keepteaching.ubc.ca/ . Included in discussion of principle #5 is guidance to instructors to "Carefully weigh the pros and cons of using remote proctoring software such as Proctorio, in light of practical and ethical concerns such as hardware accessibility and student privacy." The document links to the "Principles" document discussed above.

52. The Office of the Provost and Vice-President Academic, Okanagan Campus of UBC has also included a link to the "Principles" document on its "Faculty Resources for Academic Integrity" document. Attached as **Exhibit AI** is a copy of this document as published at https://provost.ok.ubc.ca/initiatives/learning-services/faculty-resources-for-academic-integrity/ .

53. The June 2020 incident, the AMS letter and the UBC principles were discussed in an article published on October 5, 2020 in the *Ubyssey* student newspaper titled "AMS suggests faculty not use Proctorio, remote invigilation tools in guidelines" by Kathryn Helmore. Attached as **Exhibit AJ** is a copy of this article as published at https://www.ubyssey.ca/news/ams-proctorio-guidelines/ .

B. THE CLAIMS MADE BY PROCTORIO

My August 2020 tweets

54. I admit to writing the tweets that Proctorio complains of in paragraphs 19 and 21 of its notice of civil claim. I did so to contribute to the public discussion on the ethics and efficacy of academic surveillance software such as Proctorio.

55. However, I deny Proctorio's claims that I infringed any copyright, circumvented any technological protection measure, or breached any confidence. My lawyers will outline the legal basis for my defence in their application. In the paragraphs that follow, I will outline the facts relevant to my publication and respond to the alleged facts set out in the Devoy Affidavit.

Proctorio's agreement with UBC

56.   The Devoy Affidavit, at paras. 62-67, purports to set out the terms of Proctorio's agreement with UBC (the "Proctorio-UBC Agreement"). In particular, para. 67 of the Devoy Affidavit sets out sections 5.1 and 5.2 of the Proctorio-UBC Agreement, which are said by Mr. Devoy to contain "broad confidentiality provisions."

57.   Mr. Devoy did not exhibit the current Proctorio-UBC Agreement to his affidavit. However, I am aware of a Proctorio-UBC Agreement dated March 4, 2018, which my friend Bryan Short obtained from UBC under the *Freedom of Information and Protection of Privacy Act*. Attached as **Exhibit AK** is a copy of the agreement obtained by Mr. Short. Attached as **Exhibit AL** is a letter dated August 31, 2018 from UBC's Office of the University Counsel regarding the request.

58.   The Devoy Affidavit does not set out section 5.3 of this agreement, which is entitled "Confidentiality Exceptions." Section 5.3 states in part:

> Notwithstanding the foregoing, the provisions of Sections 5.1 and 5.2 will not apply to Confidential Information that (i) is publicly available or in the public domain at the time disclosed; (ii) is or becomes publicly available or enters the public domain through no fault of the recipient; (iii) is rightfully communicated to the recipient by persons not bound by confidentiality obligations with respect thereto; (iv) is already in the recipient's possession free of any confidentiality obligations with respect thereto at the time of disclosure; (v) is independently developed by the recipient; or (vi) is approved for release or disclosure by the disclosing Party without restriction. …

Proctorio's license to other YouTube users

59.   Proctorio's claim against me is based in part on videos that Proctorio uploaded to YouTube, a publicly accessible video sharing website.

60.   All users of YouTube, including Proctorio and myself, are subject to YouTube's Terms of Service as a condition of using YouTube. Attached as **Exhibit AM** is a printout of YouTube's Terms of Service.

61.   One of the terms of YouTube's Terms of Service reads as follows:

License to Other Users

You also grant each other user of the Service a worldwide, non-exclusive, royalty-free license to access your Content through the Service, and to use that Content, including to reproduce, distribute, prepare derivative works, display, and perform it, only as enabled by a feature of the Service (such as video playback or embeds). For clarity, this license does not grant any rights or permissions for a user to make use of your Content independent of the Service.

62.   All of my tweets were made using functionality enabled by a feature of YouTube, as I will explain below.

Proctorio's unlisted YouTube videos

63.   In his Affidavit, Mr. Devoy states that Proctorio hosted explanatory videos "on a private channel on YouTube" (paras. 11 and 32). This is not true.

64.   In fact, Proctorio's channel is public and available at this address: https://www.youtube.com/channel/UCrOZb5jmkpwnv7pU_mIdkOA . Attached as **Exhibit AN** is a screenshot of Proctorio's YouTube channel as it appeared on September 24, 2020.

65.   What Proctorio actually did was post *unlisted* videos on its *public* YouTube channel. An unlisted video is like an unlisted telephone number. Unlisted telephone numbers do not appear in the telephone directory. However, anyone with an unlisted phone number can dial it, and anyone with the number can share it.

66.   Unlisted YouTube videos work the same way. The author of an unlisted video can make it available to others by sharing its unique URL, in the same way that the holder of an unlisted telephone number can give their telephone number to friends and family.

67.   Attached as **Exhibit AO** is a copy of the YouTube Help page titled "Change video privacy settings," as it appeared at https://support.google.com/youtube/answer/157177?co=GENIE.Platform%3DDesktop&hl=en . It explains the three available privacy settings on YouTube: public, private, and unlisted. It states that "Unlisted videos and playlists can be **seen and shared by anyone with the link**" (emphasis in original). It also notes that "Anyone with the link can also reshare it."

68.   As indicated in YouTube's Help documentation, a person who views an unlisted YouTube video is free to use the features of YouTube to share that video with others. This is done by clicking the "Share" button in the YouTube interface. YouTube then presents the user with a variety of options, including embedding the unlisted video in a web page, posting a link to the unlisted video to social media sites such as Facebook, Twitter, Reddit, and Tumblr, or copying the URL of the unlisted video to the clipboard, to be disseminated in other ways. Attached as **Exhibit AP** is a screenshot of the "Share" options available when viewing an unlisted video on YouTube.

69.   Another way to make an unlisted video available to others is by "embedding" it within a web page. This is what Proctorio does in its Help Centre. An embedded video appears as a media player (a box allowing the user to play a video) on a website hosted by another person or company, such as Proctorio. While the embedded video appears to be part of Proctorio's web page, it is actually hosted on YouTube.

70.   An example of an unlisted YouTube video from the same public channel is embedded in another   web   page   is   a   press   release   published   by   Proctorio   at https://www.prweb.com/releases/2017/11/prweb14950071.htm . A screenshot of this web page is attached as **Exhibit AQ**. As explained above, if clicked on, the video can be opened on YouTube at https://youtu.be/BqnlPUcy30s . A screenshot of the unlisted video on YouTube is attached as **Exhibit AR**.

71.   Embedded unlisted videos can be shared in the same manner as unlisted videos viewed on the YouTube web page. I have prepared a demonstration to illustrate:

    a.   Attached as **Exhibit AS** is an embedded unlisted YouTube video displayed on a web page. When the user's mouse moves over the video, buttons are shown at the top of the video. These include the Share button shown in the upper-right corner.

    b.   Attached as **Exhibit AT** is the screen that appears if a user clicks the Share button on an embedded unlisted YouTube video. It offers users the ability to post a link to the unlisted video to social media sites such as Facebook and Twitter, and it allows the user to copy the URL of the unlisted video to the user's clipboard, to be disseminated in other ways.

c.   If the user clicks the YouTube channel profile picture (shown in the upper-left corner of the video in Exhibit AS) or the ellipses on the share screen (shown in Exhibit AT), the unlisted YouTube video will appear in YouTube. Attached as **Exhibit AU** is a screenshot of how the unlisted video appears on YouTube. A Share button is visible in the lower right.

d.   If the user clicks the Share video, a menu will appear. Attached at **Exhibit AV** is an example of this menu. The options available include embedding the unlisted video in a web page, posting a link to the unlisted video to social media sites such as Facebook, Twitter, Reddit, and Tumblr, or copying the URL of the unlisted video to the clipboard, to be disseminated in other ways.

Proctorio's YouTube videos are available on publicly-facing websites

72.   In his Affidavit, Mr. Devoy states that I "shared publicly links to at least seven of the plaintiff's confidential and proprietary videos which are accessible only to administrators and instructors via the Help Center" (para. 19). The second half of this sentence – that the videos "are accessible only to administrators and instructors via the Help Center" – is not true.

73.   At least three of the videos that I shared – the Abnormalities, Behavior Flags, and Behavior Settings videos – were available on UBC's public facing website.

74.   Attached as **Exhibit AW** is a document titled "Instructor Guide to Proctorio at UBC." This document was originally posted on a publicly-accessible website at https://keepteaching.ubc.ca/files/2020/03/proctorio-instructor-guide.pdf . This version has since been removed and replaced with another one, but the previous version is available in the Internet Archive   at https://web.archive.org/web/20200422170942/https://keepteaching.ubc.ca/files/2020/03/proctorio-instructor-guide.pdf . On page 5, it contains links to the Behavior Settings and Abnormalities videos, with direct URLs to those videos in footnotes 11 and 12. On page 6, it contains links to the Gradebook and Behavior Flags videos, with direct URLs to those videos in footnotes 13 and 14. Since my August 2020 tweets, Proctorio has disabled the links to the Behavior Settings, Abnormalities and Behavior Flags videos. The link to the Gradebook video is still functional.

75.   Attached as **Exhibit AX** is a screenshot taken by me of a publicly-accessible web page, https://lthub.ubc.ca/guides/proctorio-instructor-guide/ on September 6, 2020. Indicated in the screenshot are publicly available links to the Behavior Settlings, Abnormalities, Gradebook, and Behavior Flags videos.

Proctorio disabled links to its YouTube videos within hours or minutes of my tweets

76.   At paragraph 40 of the Devoy Affidavit, Mr. Devoy states that "Proctorio took immediate steps to protect its Proprietary Information by disabling the links published, so that they no longer led to the videos." Indeed, Proctorio disabled these links within hours, and in one instance just minutes, of my tweets.

77.   I published my tweet linking to the Abnormalities video on Sunday, August 23, 2020 at 9:21pm. A screenshot of this tweet is attached as **Exhibit AY**. By 11:32pm the same evening, Proctorio had disabled the link.

78.   I published my tweet linking to the Behaviour Flags video on Monday, August 24, 2020 at 8:06pm. A screenshot of this tweet is attached as **Exhibit AZ**. By 8:18pm the same evening, Proctorio had disabled the link.

79.   I published my tweet linking to the Display Room Scan video on Monday, August 24, 2020 at 8:23pm. A screenshot of this tweet as preserved in the Internet Archive is attached as **Exhibit BA**. By 10:13pm the same evening, Proctorio had disabled the link.

80.   I published my tweet linking to the Abnormal Eye Movement video on Monday, August 24, 2020 at 8:44pm. A screenshot of this tweet is attached as **Exhibit BB**. By 10:13pm the same evening, Proctorio had disabled the link.

81.   I published my tweet linking to the Abnormal Head Movement video on Monday, August 24, 2020 at 8:45pm. A screenshot of this tweet is attached as **Exhibit BC**. By 10:13pm the same evening, Proctorio had disabled the link.

82.   I published my tweet linking to the Record Room video on Monday, August 24, 2020 at 8:47pm. A screenshot of this tweet is attached as **Exhibit BD**. By 10:13pm the same evening, Proctorio had disabled the link.

83.   I published my tweet linking to the Behaviour Settings video on Monday, August 24, 2020 at 8:51pm. A screenshot of this tweet is attached as **Exhibit BE**. By 10:13pm the same evening, Proctorio had disabled the link.

84.   Attached as **Exhibit BF** is my tweet from Monday, August 24, 2020 at 10:14pm where I note all the videos had been removed.

Academy Screenshot Tweet

85.   I was surprised to see that Proctorio had disabled the links to the videos that I had included in my tweets, for two reasons. First, it shows the intensity with which Proctorio was surveilling my activities on social media, even late on a Sunday night. Second, it shows that Proctorio was willing to undermine its own technical support resources (as embedded on public websites and Proctorio Academy) rather than allow its activities to be subjected to public scrutiny.

86.   It was with this second concern in mind that I published a tweet on August 29, 2020 (the "Academy Screenshot Tweet") that included a screenshot from the Proctorio Academy website (the "Academy Screenshot"). I believe the Academy Screenshot Tweet is what Proctorio refers to in paragraph 21 of its notice of civil claim, and in paragraph 42 of the Affidavit of John Devoy.

87.   As I discussed above, I was and am gravely concerned about Proctorio's lack of transparency about how its algorithms work, and how it labels student behaviours as "suspicious." My purpose in tweeting this screenshot was to show how Proctorio was so concerned with secrecy that it would undermine its own support resources in order to avoid scrutiny of its activities. My purpose was not to disclose any confidential material, and as I will outline below, nothing in my screenshot was not already available online.

88.   Proctorio demanded that I delete the Academy Screenshot Tweet after it obtained an injunction against me on September 2, 2020. While I did not believe that the injunction order required me to delete anything that I had already published, I was afraid that Proctorio would bring further proceedings against me if I refused to acquiesce to their demands. I therefore deleted the Academy Screenshot Tweet from Twitter.

89.   Attached as **Exhibit BG** is a screenshot taken from the Internet Archive showing the Academy Screenshot Tweet as it appeared before I deleted it. Because of the injunction, out of an abundance of caution I have placed this exhibit inside a sealed envelope.

90.   The Academy Screenshot Tweet stated the following:

> All of us have to demand transparency.

> How EXACTLY does this non-magical software work? Why is Proctorio hiding this information? Their OWN COURSE on how Proctorio works was censored this week after I shared some of the videos.

91.   To illustrate this point, I attached the Academy Screenshot to the Academy Screenshot Tweet. The Academy Screenshot was a screenshot of a single page from the Proctorio Academy Course Material which shows three "Video unavailable" boxes where Proctorio's embedded unlisted YouTube videos previously appeared.

Information about Proctorio's functionality is widely available on the Internet

92.   The web page shown in the Academy Screenshot contained three embedded unlisted YouTube videos: "Behavior Settings", "Behavior Flags", and "Abnormalities". As discussed in paragraph 75, these videos were available on UBC's public "Proctorio Instructor Guide" web page, as seen in Exhibit AW. Indeed, UBC's publicly accessible Proctorio Instructor Guide described them in greater detail than the Academy Screenshot.

93.   Contrary to the assertions at paragraph 45 of the Devoy Affidavit, information about the functionality of Proctorio is already widely available on publicly-accessible websites. The following is an illustrative sample of the kinds of information available:

> a.   The University of British Columbia has published "Proctorio Instructor Guide" at https://lthub.ubc.ca/guides/proctorio-instructor-guide/ . Attached as **Exhibit BH** is a copy of that document as it appeared on September 24, 2020. Information relating to every aspect of the Proctorio Academy screenshot is present, including Proctorio Behaviour Settings, Settings Customization, Behaviour Flags, and Abnormalities.

> b.   The British Columbia Institute of Technology has published "Job Aid: Proctorio Options   Explained"   at   https://ltc.bcit.ca/help/wp-

content/uploads/2020/04/Proctorio-Features-Explained.pdf . Attached as **Exhibit BI** is a copy of that document as it appeared on September 24, 2020. This 17 page document covers Proctorio Behaviour Settings, Settings Customization, Behaviour Flags, and Abnormalities in depth.

c.   The University of Texas has published "Exam Security with Proctorio" at https://utexas.instructure.com/courses/633028/pages/exam-security-with-proctorio . Attached as **Exhibit BJ** is a copy of that document as it appeared on September 24, 2020. This public course covers Proctorio Behaviour Settings and Settings Customization. Embedded in the course are three unlisted videos from Proctorio's YouTube channel, entitled "Exam Settings 2019", "Accessing the Proctorio Gradebook", and "Proctorio Gradebook Overview".

d.   The University of Missouri – St. Louis has published "UMSL Proctorio Faculty Guide" at https://www.umsl.edu/~campustesting/files/PDFs/Proctorio%20Faculty%20Guide .pdf . Attached as **Exhibit BK** is a copy of that document as it appeared on September 24, 2020. This 16 page document covers Proctorio Behaviour Settings, Settings Customization, Behaviour Flags, and Abnormalities.

e.   The University of Colorado – Boulder has published "Proctorio Gradebook in Canvas" at https://oit.colorado.edu/sites/default/files/docs/Canvas%20Proctorio%20Gradebo ok.pdf . Attached as **Exhibit BL** is a copy of that document as it appeared on September 24, 2020. Information relating to every aspect of the Proctorio Academy screenshot is present, including Proctorio Behaviour Settings, Settings Customization, Behaviour Flags, and Abnormalities.

f.   The Ohio State University has published several documents:

i.   "Proctorio Exam Set-up" at https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/proctorio-

exam-set . Attached as **Exhibit BM** is a copy of that document as it appeared on September 24, 2020.

ii. "Proctorio Lockdown Options" at https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/proctorio-exam-set/proctorio-lockdown-options . Attached as **Exhibit BN** is a copy of that document as it appeared on September 24, 2020.

iii. "Proctorio Recording Options" at https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/proctorio-exam-set/proctorio-recording-options . Attached as **Exhibit BO** is a copy of that document as it appeared on September 24, 2020.

iv. "Proctorio Verification Options" at https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/proctorio-exam-set/proctorio-verification-options . Attached as **Exhibit BP** is a copy of that document as it appeared on September 24, 2020.

v. "Proctorio Gradebook" at https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/proctorio-gradebook . Attached as **Exhibit BQ** is a copy of that document as it appeared on September 24, 2020.

vi. "Proctorio Suspicion Level" at https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/proctorio-suspicion-level . Attached as **Exhibit BR** is a copy of that document as it appeared on September 24, 2020.

g. Academic publisher McGraw-Hill has published an interactive "Proctorio Self-Guided Demo" website to market Proctorio to purchasers of textbooks at https://www.mheducation.com/highered/connect/proctorio/click-demo.html . Attached as **Exhibit BS** is a compilation of screenshots that I produced from this demonstration on September 26 and 27, 2020.

C. PROCTORIO'S LAWSUIT AND *EX PARTE* INJUNCTION AGAINST ME

94.   On September 2, 2020, Proctorio obtained an *ex parte* injunction order without notice to me. I first learned about the injunction, and this lawsuit, when a reporter from the Vancouver Sun called me at work to ask for comment.

95.   This injunction has made me fearful of criticizing or even discussing Proctorio in public and in private. The injunction is worded in broad terms, to the point where I am concerned that I would be unable to assist faculty members if they chose to use Proctorio and needed help. Mr. Devoy says in his affidavit that "an injunction… will not cause any harm to the defendant, as he will continue to be able to access the Application Documentation if required for use in his employment at UBC" (para. 50). However, the injunction seems to prevent me from even directing a faculty member to Proctorio's help materials should they ask for assistance. Sharing links to YouTube videos is also a normal part of my practice, but this is prohibited by the injunction.

96.   As I have discussed above, informed public discussion and critique of Proctorio and other academic surveillance software requires an understanding of what the software actually does. Some of the best information about this is already available to the public on the internet, including the material I have cited and exhibited to this affidavit. However, the broad wording of the injunction – which even prevents me from sharing hyperlinks to anything that Proctorio might consider "confidential information" – has significantly constrained my ability to participate in the public debate about academic surveillance software.

97.   Further, Proctorio seems to interpret the injunction even more broadly than I had understood the plain words of the order to mean. For example, when Proctorio served me with the injunction order and the notice of civil claim, their lawyer emailed me and said:

> Please comply with this order. In particular, you will need to take down the screen shot of the Proctorio Academy course material in your August 29 Tweet. Further we would ask that you remove the links to and references to the 7 Help Center videos which you tweeted on August 23 and 24.

98.   Attached as **Exhibit BT** is a copy of this email, without attachments.

99.   Shortly after I retained counsel, on September 9, 2020, Proctorio's lawyer emailed my counsel to demand that I remove the Proctorio Academy tweet. Attached as **Exhibit BU** is a copy of this email.

100.   Although I did not believe that the injunction order required me to delete anything that I had already published, I was afraid that Proctorio would bring further proceedings against me if I refused to acquiesce to their demands.

101.   My counsel replied to Proctorio's lawyer by letter on September 11, 2020. Attached as **Exhibit BV** is a copy of this letter.

102.   Attached as **Exhibit BW** is a transcript of the proceedings before Giaschi J. on September 2, 2020, which my lawyers obtained from the court reporter.

103.   Proctorio's lawsuit against me has had a profound effect on my life. It has caused me a great deal of stress, and has aggravated a pre-existing medical condition. It has caused difficulty in my home life and has caused my wife and I to put our plans to start a family on indefinite hold, because of financial and health considerations. It has also put considerable financial strain on me and my family.
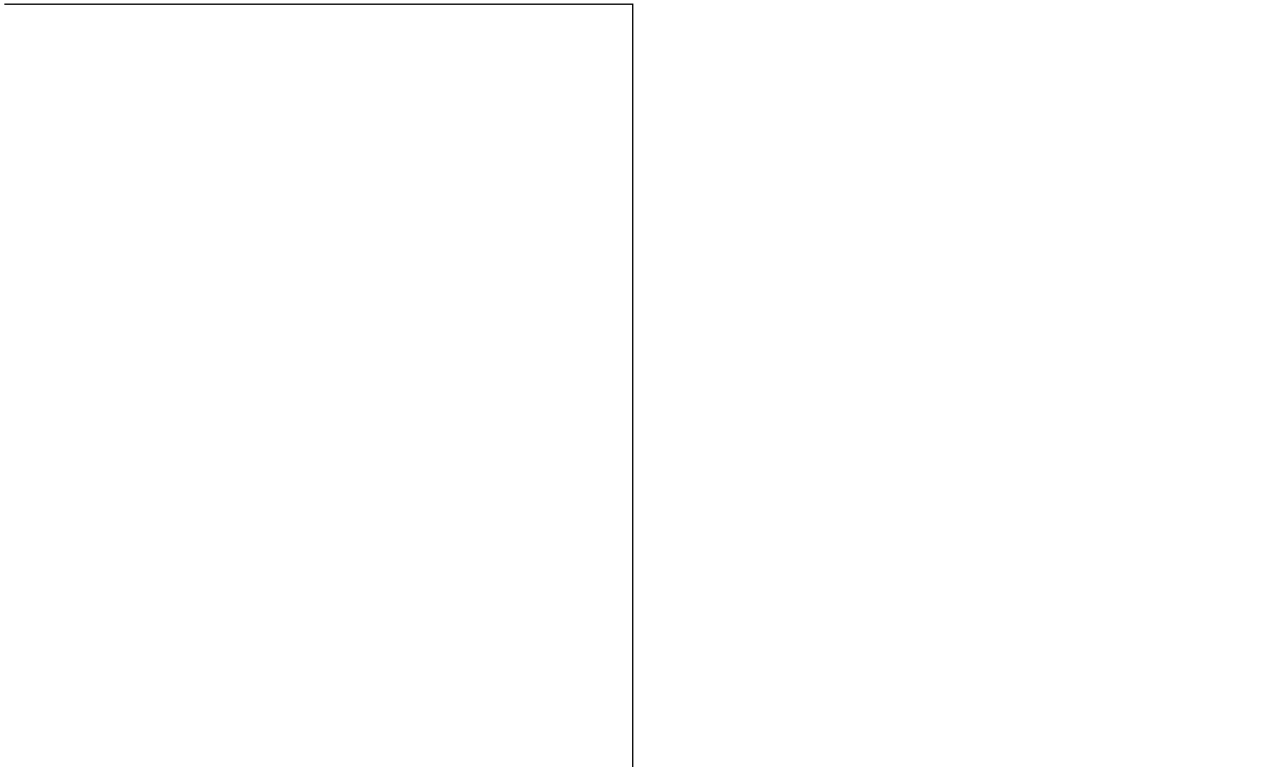
104. Proctorio's lawsuit has also caused me to fear for my employment. Though I am being sued as an individual, both the lawsuit and media coverage of it mention that I am an employee of UBC. If I should need to find alternate employment, Proctorio's allegations that I have somehow improperly shared information could be misunderstood or misconstrued by potential employers.

105. The continuing injunction against me also limits my ability to defend my reputation. For example, a colleague suggested to me that the media coverage of this lawsuit made it sound like I could have shared videos of students. This is absolutely not the case, but the injunction prevents me from showing colleagues or supervisors what I did share.

AFFIRMED BEFORE ME at Vancouver,)
British Columbia, on 15 October 2020)
)
)
A Commissioner for taking Affidavits for)   **Ian Linkletter**
British Columbia.)
        JOHN TRUEMAN)
          Barrister
  1512 - 808 Nelson Street
  Vancouver, BC, V6Z 2H2

Ian Linkletter

ian@linkletter.org
604 730 1073
Vancouver, British Columbia

EXPERIENCE

The University of British Columbia | Fall 2012 – Present | Vancouver, British Columbia
Learning Technology Specialist, Educational Technology Support
- Led UBC team chat pilot, working with faculty and LT Hub to evaluate Mattermost as an Enterprise learning technology.
- Project Manager and Technology Lead of *Reconciliation Through Indigenous Education* Massive Open Online Course.
- Project Manager of *Bringing Mental Health to Schools*, a self-paced massive course for teachers in grades 7 - 12.
- Responsible for learning technology administration and support of over 170 fully online Faculty of Education courses.
- Supervises Tech Rover, a Co-op student responsible for providing just in time technology support to faculty.
- Provides educational consultation support to faculty regarding learning technology selection and integration.
- Founder of Learning Technology Users Group, a community to improve communication and collaboration across UBC.
- Researches, monitors, and evaluates developments in educational technologies and design practices.
- Analyzes, assesses, and addresses IT risk, mitigating when possible and creating contingency plans when needed.

The University of British Columbia | Fall 2011 – Fall 2012 | Vancouver, British Columbia

User Support Specialist, Professional Development & Community Engagement
- Responsible for LMS administration and support of PDCE's Blackboard and WebCT Vista courses.
- Liased with faculty, course authors, and external clients to develop online courses and materials.
- Proposed, planned, and implemented use of institutional content within LMS to improve efficiency.

British Columbia Institute of Technology | Fall 2010 – Fall 2011 | Burnaby, British Columbia

Technical Support Liason, Educational Technology Support
- Responsible for administration and support of BCIT's D2L Brightspace-based learning management system.
- Led online development of over 20 online courses.

Fanshawe College | Fall 2007 – Fall 2010 | London, Ontario

Educational Technologist, Learning Systems Services
- Responsible for administration of FanshaweOnline, Fanshawe's D2L Brightspace-based Learning Management System.
- Provided senior level technical support to over 30,000 users, solving the most highly escalated problems.
- Researched technology trends on behalf of the Chief Information Officer and Learning Systems Services Manager.
- Liased between stakeholders and vendors to develop project proposals, requirements, and implementation plans.
- Created and executed testing plans for LMS upgrades. Wrote user guides and documentation.
- Automated enrollments into over 5,000 courses per year, eliminating seasonal overtime for two dozen administrators.
- Integrated third-party products into LMS, including Turnitin, Elluminate, and Respondus Lockdown Browser.

Fanshawe College | Fall 2006 – Fall 2007 | London, Ontario

Library Technician, Library and Media Services
- Researched and proposed WebCheckout, the successful candidate for a college-wide equipment booking system.
- Provided information and reference service to patrons

EDUCATION

The University of Western Ontario | London, Ontario

Master of Library and Information Science, 2006
- Coursework focused on technology, management, and provision of reference/instruction service.

The Evergreen State College | Olympia, Washington

Bachelor of Arts, 2005
- Major concentration in social science, minor concentration in business.

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Ian Linkletter PRO ★

My name is Ian, I am an educational technologist employed by the
University of British Columbia. I work in the Faculty of Education and
am fortunate to work in a place that aligns with my values.

⌀ linkletter.opened.ca   🐦 Linkletter

All decks   ETUG 2   learning communities 3   massive learning 2   team chat 6   🔍 ☰

BCcampus - The Technology Toolkit
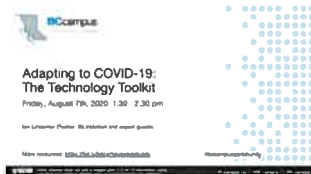
These are the introductory slides for a webinar I hosted with BCcampus related to how
technology can create a sense of care and community in an online learning environment. This
webinar brought in expert guests for a faculty track and a technologist track. The sessions are
archived on the BCcampus website: https://bccampus.ca/event/adapting-to-covid19-the-
technology-toolkit/

Created Aug 21st, 2020   👁 40   ♥ 0

BCcampus - Learning Design Studio

These are the slides my co-facilitator Brenna Clarke Gray created for our first Learning Design
Studio with BCcampus. This was the second webinar in a 5 part series, and the recording is
available on the BCcampus website: https://covid19.bccampus.ca/webinars/adapting-to-
covid-19-learning-design-studio-drop-in-session/

Created Aug 20th, 2020   👁 42   ♥ 0

Adapting to COVID-19: In it Together – Building Community and Enacting Care in Online Environments
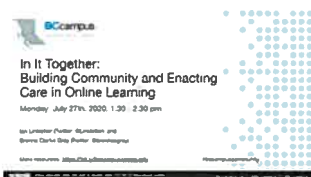
Brenna Clarke Gray and I have co-led a 5-part series of events for BCcampus related to
building community and care in online environments. These are the slides we co-created for
the kickoff webinar. The recording and additional resources are available on the BCcampus
website: https://covid19.bccampus.ca/mental-health-support/adapting-to-covid-19-in-it-
together-building-community-and-enacting-care-in-on-line-environments/

Created Aug 20th, 2020   👁 39   ♥ 0

Open Educational Technology

Presentation and exploration to UBC's Faculty of Education regarding open educational technology in our context, the advantages of open technologies, and how to get started.

Created Aug 20th, 2020   ◎ 72   ♥ 1

Faculty Mentor Session - Accessibility Presentation

A presentation to UBC Faculty of Education faculty and staff who wish to improve accessibility in their online courses.

Created Aug 18th, 2020   ◎ 94   ♥ 0

Ian: the learning designer?

This was really fun. I had the opportunity to think deeply about if I could be a learning designer. I realized along the way that I may already be one.

Created Mar 12th, 2020   ◎ 125   ♥ 0

Early Childhood Education Community

This presentation was to a group of instructors teaching in Early Childhood Education in the Faculty of Education at UBC. I was asked to share strategies for teaching large sections (36 students) online.

Created Mar 4th, 2020   ◎ 130   ♥ 0

OSS @ UBC

Presentation to UBC Open Education Working Group describing some of the ways open educational technology is being used at UBC.

Created Jan 29th, 2020   ◎ 148   ♥ 0

\<presenter> You down with OpenETC?... \<audience response> !

Who's down with OpenETC? Yeah you know me!

Created Nov 1st, 2019 | 👁 260   ♥ 0   Source: Jason Toal
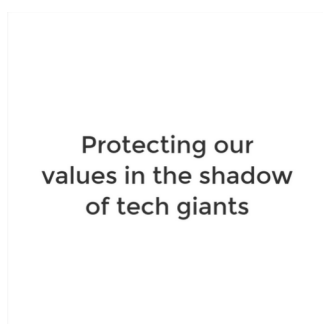
Protecting our values in the shadow of tech giants

June 21st, 2019 - My five minute Gasta at the Educational Technology Users Group conference, hosted by Thompson Rivers University in Kamloops, BC. Video of this talk is available: https://www.youtube.com/watch?v=PG_uvL7pvG8

Created Sep 23rd, 2019 | 👁 33   ♥ 0
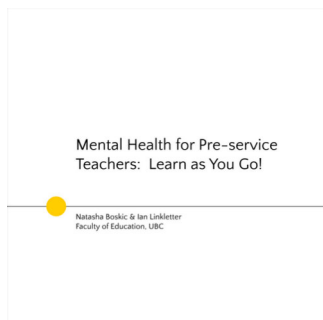
Mental Health for Pre-Service Teachers: Learn as You Go!

I presented with Dr. Natasha Boskic at Canadian Network for Innovation in Education (CNIE) 2019.

Created May 27th, 2019 | 👁 317   ♥ 0

Rethinking Discourse in an Online Learning Environment

I presented (with Stoo Sepp) at the Canadian Network for Innovation in Education (CNIE) 2019. UBC recently piloted an open source team chat technology called Mattermost, which has now been implemented at Enterprise scale for courses and cohorts. Implemented wisely, chat has the potential to increase timeliness of feedback, encourage student to student collaboration, and increase a sense of community within an online course. This technology has been transformative in how it blends real-time and asynchronous modalities, challenges the formality of a traditional discussion forum, and encourages ongoing participation. This session will cover real case studies from UBC's Faculty of Education and provide a space to engage with them in groups.

Created May 27th, 2019 | 👁 202   ♥ 0

Chatting for Pedagogical Engagement: Mattermost as a Tool for Learning

I presented with faculty and staff colleagues from UBC at BCNET 2019 about Mattermost's UBC implementation and how it is being used to enhance teaching and learning. #BCNET2019 Presenters were Letitia Englund, Dr. Mari Pighini, Pan Luo, and Tim Kato.

Created May 16th, 2019 | 👁 222 | ♥ 0

EOASC and Mattermost

November 2018 presentation to the Distance Learning team in the Earth, Ocean and Atmospheric department in the Faculty of Science at UBC.

team chat

Created Nov 29th, 2018 | 👁 353 | ♥ 0

ETUG Fall Workshop 2018

Ian Linkletter's lightning talk at ETUG Fall 2018 Workshop at Emily Carr.

ETUG   learning communities   team chat

Created Nov 1st, 2018 | 👁 453 | ♥ 0

Festival of Learning 2018

Ian Linkletter's Festival of Learning 2018 presentation about the UBC Team Chat project.

learning communities   team chat

Created May 28th, 2018 | 👁 782 | ♥ 0

Celebrate Learning Week 2018 - Choose Your Own Learning Presentation

May 2018 - Ian Linkletter's team chat presentation for CLW

learning communities   team chat

6
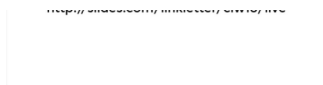
Created May 3rd, 2018   👁 417   ❤ 0
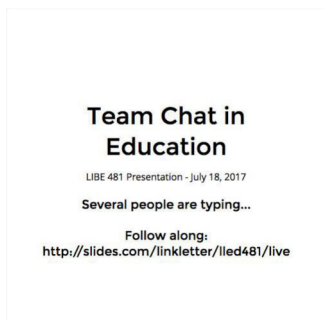
Mattermost - LLED 481 Presentation

July 2017 - Ian Linkletter's Mattermost presentation for LLED 481.

team chat

Created Jul 5th, 2017   👁 596   ❤ 0

Team Chat in Education

LIBE 481 Presentation - July 18, 2017

Several people are typing...

Follow along:
http://slides.com/linkletter/lled481/live

UBC Mattermost Chat Pilot

March 2017 - Ian Linkletter's Mattermost presentation for Learning Analytics Visual Analytics (LAVA) group at UBC.

team chat

Created Mar 23rd, 2017   👁 690   ❤ 0

UBC Mattermost Chat Pilot

Several people are typing...

Follow along:
http://slides.com/linkletter/mmlava/live
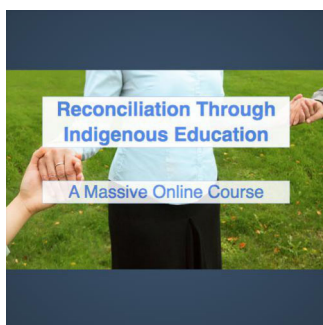
Reconciliation Through Indigenous Education: A Massive Online Course

Ian Linkletter's UBC TEC Expo 2015 presentation.

massive learning

Created Jul 7th, 2015   👁 734   ❤ 0

Reconciliation Through Indigenous Education

A Massive Online Course
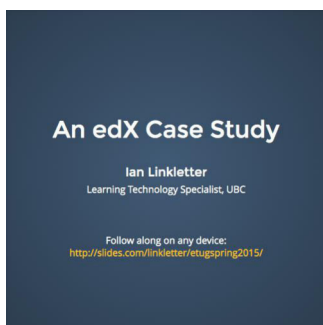
An edX Case Study

Ian Linkletter's ETUG 2015 Spring Workshop presentation.

ETUG   massive learning

Created Jun 1st, 2015   👁 2,554   ❤ 0

An edX Case Study

Ian Linkletter
Learning Technology Specialist, UBC

Follow along on any device:
http://slides.com/linkletter/etugspring2015/

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r/ **UBC**

reddit UBC

Linkletter (2,381) | ✉ | 💬 | **preferences** | **logout**

comments   **Admissions Megathread**   **Housing Megathread**

search   🔍
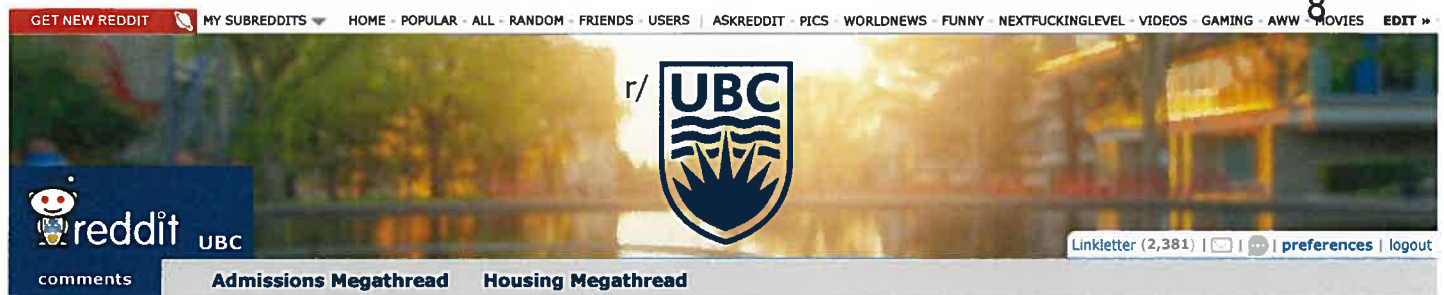
▲
77
▼

Regarding Online Exams using Proctorio... (CFA) [Discussion] (self.UBC)
submitted 6 months ago * by iwishiwasswallowed [Science]

this post was submitted on 16 Mar 2020
77 points (94% upvoted)

shortlink: https://redd.it/fjdmlb

How is this going to work? I've never used proctorio and I really don't like the idea of it. The idea of a webcam being able to see your eye movement and detect any "suspicious activity". Is it expecting us to stare at the screen the entire time? What about trying to solve a math problem and needing a scrap piece of paper? What if I'm doing a bio problem and we're allowed a cheatsheet? I'll probably get flagged for that.

Also, the biggest problem in all of this is the fact that it thinks you're cheating if you look away from the screen too much. While I fully understand why such program would be required, it's pretty stressful on most of us (I assume). Since it's an automatic program, it could flag you even if you aren't actually cheating.

I have ADHD, and I fidget a lot. I can't stare at the screen for too long, it hurts my eyes and I can't focus on it for the entirety of the exam. I also stretch a lot during any test, and my neck easily gets sore so I do this thing where I excessively look up and crack my neck/shoulders to relieve tension. Long story short, I can't stop moving (even with the meds), and I already have enough trouble in a regular exam setting.

I'm not saying we should cancel finals, nor disregarding that proctorio is the "easiest" solution for converting to online classes. I'm just expressing how most of us, even neurotypicals, would probably be concerned with the program and it's strictness + invasion of privacy.

For people with the Centre for Accessibility, what are you guys going to do? And how are you handling the proctorio situation?

For people not with the Centre for Accessibility, how do you feel about proctorio?

42 comments   share   save   hide   **give award**   report   crosspost

This is Exhibit C referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

Submit a new link

Submit a new text post

UBC

leave   43,276 stuck in Zoom calls

○   541 considering a gap year

☑ Show my flair on this subreddit. It looks like:
Linkletter **Staff** (edit)

all 42 comments

sorted by: **top** ▼

▲ [–] **blackandwhite1987** Graduate Studies   59 points 6 months ago
▼ Yeah I'm not ok with installing this software, it's malware imo. I would never have signed up for a class knowing I'd have to use it. That's not even getting into the accessibility issues (ie. if you don't have a functioning webcam/mic)

permalink   embed   save   **give award**

   ▲ [–] **iwishiwasswallowed** [Science] [S] 20 points 6 months ago
   ▼ Yeah I don't trust it at all

   permalink   embed   save   parent   **give award**

▲ [–] **UBC_Adderall_Dealer** 15 points 6 months ago
▼ Yup. I dug my old laptop from high-school out of my closet and completely wiped it just to install Proctorio. I refuse to even have Chrome installed on my main computer, let alone Chrome + this privacy nightmare of an extension.

permalink   embed   save   parent   **give award**

   ▲ [–] **blackandwhite1987** Graduate Studies   3 points 6 months ago
   ▼ Yep, same here.

   permalink   embed   save   parent   **give award**

   ▲ [–] **AgreeableLandscape3** [Environmental Sciences] 2 points 6 months ago
   ▼ I use Linux. How am I going to install this thing?!

   I'm tempted to just throw it in a Windows VM with no access to real-world sensors.

   permalink   embed   save   parent   **give award**

     ▲ [–] **Dr_CSS** 1 point 2 months ago
     ▼ You can do that+pass through the webcam via usb

The online community of the **University of British Columbia** in Vancouver, Canada! For the Okanagan campus, **/r/ubco**.

Basic Guidelines:

1. Treat each other with respect. No slurs (racial, gender, homophobic, mental health, etc)
2. Engage in good faith. If you can't say something nice, don't say anything.
3. Use Megathreads. If the megathread is currently pinned, you must post your question there.
4. Keep content relevant to UBC. Posts must be related the UBC or its community. All memes must be OC and/or explicitly related to UBC.
5. Follow reddiquette. This guideline covers illegal activities including but not limited to linking to unauthorized copyrighted materials, doxxing, and violations of UBC academic conduct policy. Read more about reddiquette.
6. No Advertisements. UBC, AMS, or otherwise affiliated non-profit organization may advertise within reasonable limits. For-profit and non-UBC organizations should contact the mod team.
7. Surveys should be posted to /r/samplesize. If it is important that your survey reach the UBC community specifically, please contact the mods.

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[–] **AgreeableLandscape3** [Environmental Sciences] 5 points 6 months ago

It's straight out of *1984*.

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[–] [deleted] 6 months ago

[deleted]

[–] **blackandwhite1987** [Graduate Studies] 14 points 6 months ago

Doesn't matter if it has access to my whole system including webcam

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[–] **Kinost** [Political Science] 12 points 6 months ago

It is very invasive. I was only willing to use it because I had a spare laptop that I could wipe clean.

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[–] **Cheesyhoney** [Finance] 37 points 6 months ago

even on an in person exam I freeze up and can't think when an invigilator is looking over my shoulder. i can't imagine what writing an exam with proctorio would be like knowing they're recording my every move.

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[–] **chinesedenim** [Neuroscience] 29 points 6 months ago

First, the security issues are a big thing. Second while I get that it's unlikely(?), the whole idea that I could be flagged as cheating and potentially wrongfully accused is scary. What do you do in that situation? I have no witnesses, no way to support that nothing happened between my scan of the room/resources and the end of the exam. It's like the signal detection theory: if my prof is very strict with how they review footage, the chance of being flagged as cheating is higher - but if my prof is more lenient, more people could get away with cheating.

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[–] **iwishiwasswallowed** [Science] [S] 4 points 6 months ago

Exactly this.

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[–] **talaron** [Graduate Studies] 21 points 6 months ago

I've TA'd for multiple years now with all different kinds of profs and instructors, and I guarantee you that the purpose of this is 95% to give you the feeling that you *could* get caught and therefore discourage cheating, and 5% to check the most "suspicious" cases by hand to make sure that no one gets away with super obvious and stupid attempts.

No instructor has the time to watch hours and hours of video recordings, and no instructor will try to start an academic misconduct case based on "suspicious eye movements" that some random proprietary software has flagged.

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[–] **arhsj** [Computer Science] 21 points 6 months ago

The important thing to note with Proctorio is that suspicious actions only get flagged. It's ultimately up to your instructor to review those flags and decide whether or not you cheated.

I've used Proctorio 4 times before for 2 different online courses (combined 2 midterms, 2 finals) so if you have any logistical questions hopefully I'd be able to help.

In most configurations of Proctorio, your instructor will likely choose to have you do a 360 degree scan where you have to physically move your webcam/laptop 360 degrees so that they can see your surroundings and what you have in front of you. This is a good time to show what you have on the table in front of you. If you have a cheat sheet or blank paper, it's also a good time to hold them up to show your instructor who will review the footage that it is in fact a cheat sheet or blank pieces of paper (I actually have done a final using Proctorio before that allowed a cheat sheet). Usually your instructor will provide more instructions if these kinds of things are allowed.

Overall, my experience with Proctorio has been pretty good. I also like to stretch, stretch my neck, take my glasses off to rub my eyes, etc. while taking an exam and I've even taken exams in the kitchen with the fridge ramping up every few minutes and have had no problems with my profs. If you have ADHD it might be worthwhile to talk to your prof beforehand and maybe see if they have any suggestions.

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[–] **iwishiwasswallowed** [Science] [S] 5 points 6 months ago

So to be clear, do they record you the entire time? Or what exactly is the "eye detecting" and other stuff talking about? Just want to know.

And yes I should talk to my prof, thank you for your reply.

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[–] **arhsj** [Computer Science] 15 points 6 months ago

FAQs/Megathreads:

- Post all admissions questions in this Admissions Megathread, please
- Incoming first year? No idea where to start? Look here for a tutorial on how to register and pick your classes.
- **Official UBC Admissions Website**

Filter the subreddit

Filter With NO Memes

Filter With NO Course Questions

View Only Memes

View Only Photography & Art

Student Resources:

- **RENEW YOUR UPASS**
- **UBC Registration Tools** - helpful tools for course registration / grades analysis.
- **UBC Club and Student Group Database** - Reviews of on-campus clubs and an actually usable alternative to the AMS Clubhouse directory.
- **UBC Grades** - grade distributions for previous offerings of all classes offered at UBC. Complemented by UBC Profstats, which offers grading variations by instructors.
- **CourseRatings.ca** - Reviews of UBC Courses
- **Unofficial transcripts** - a bookmarklet that will generate transcripts from SSC pages.
- **UBC Pre-Req Tree Navigator** - see all the courses that you can, can't, or need to take.
- **Room Schedule/Timetable** - find class and room schedules (and empty rooms to study in!)
- **Vancouver General Hospital Access & Assessment Centre** for referrals and assessment. It is a good starting point for getting help with improving your mental health.
- **AMS Services**: resources for UBC students such as a food bank, Safewalk, tutoring, advocacy and mental health/addiction resources such as AMS Vice and SpeakEasy.
- **Centre For Accessibility** - For obtaining academic concessions, and other mattters relating to accommodation any physical and mental hardships.
- **Student Support** - A general index of all UBC support services for students, with support services for academic, financial, health and other issues.
- **Student Health Service** - medical clinic w/ Mental Health & Sports Medicine
- **UBC Wayfinding** - campus map and building information
- **UBC Lost and Found** - lost something on campus? Check here!
- **Free software** - You can get Office, MATLAB, a VPN, and more, all for free.
- **Housing Chances** & **Improving your YRH Chances**

Other Useful Places:

Yes they do record you the entire time. They use an algorithm to determine if specific movements are suspicious and suspicious movements will be flagged to your instructor.

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[−] **AgreeableLandscape3** `Environmental Sciences` 6 points 6 months ago

> your instructor will likely choose to have you do a 360 degree scan where you have to physically move your webcam/laptop 360 degrees so that they can see your surroundings and what you have in front of you.

This is a MASSIVE invasion of personal privacy, especially if you consider the fact that it's possible, nay, probable, that the company behind this software isn't even going to delete that video or might even analyse it with AI or sell it.

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[−] **CyberneticTitan** `Engineering Physics` 3 points 6 months ago

When you took the exam was it given with a time window? i.e. you have a 4 hour window between 2PM and 6PM to complete a two-hour exam. Or, was it everyone started at the same time?

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[−] **arhsj** `Computer Science` 7 points 6 months ago

I've experienced both. For one of my classes, there was a 24 hr window to complete it (mainly since this was PSYC 102 and there was no in-person section that was *exactly* the same). For the other, everyone started at the same time with a 10-15 minute buffer for technical issues (this was ATSC 113 so there was an in-person exam on the *exact* same material so everyone started at the same time).

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[−] **ScaryScaling** 20 points 6 months ago

I feel like it will be very hard to focus writing the exam in my room, which is where my OCD is worst. And while I hate to come off as overly sensitive, it's supposed to be my personal alone space and I feel like it is somewhat being violated with having to record myself sitting in my room for hours.

Also I drink a lot of tea and water during exams to help keep me keep calm, which will mean I may have to use the washroom several times. I had no problem with this writing with CFA, but how am I supposed to prove that I did not cheat by going off the webcam for few minutes? Especially with some of my exams being extended to more than 4 hours long, expecting me to never leave my seat seems quite harsh.

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[−] **iwishiwasswallowed** `Science` [S] 11 points 6 months ago

I feel you. My ADHD is the worst in my house too. I drink a lot of drinks during exams as well, and my exams are extended.

Hope we both figure something out, because proctorio is just not the ideal way for us.

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[−] **ScaryScaling** 6 points 6 months ago

Yeah, well my professors didn't announce what method they were going to use, but I assume at least one of them is going to decide on Proctorio or something similar.

Since the CFA seems to plan on remaining open, I am considering asking if I can still take the same exam through a computer, but instead on campus with CFA rather than at home.

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[−] **integrals_are_oceans** 6 points 6 months ago

This definitely resonates with me - I have OCD as well, and it makes me a little awkward to think that there is a video that a prof could see of me doing a compulsion while writing my exam.

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[−] **AgreeableLandscape3** `Environmental Sciences` 7 points 6 months ago

> And while I hate to come off as overly sensitive, it's supposed to be my personal alone space and I feel like it is somewhat being violated with having to record myself sitting in my room for hours.

This is absolutely not being overly sensitive. This is a basic right to privacy that is being violated.

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[−] **ghlitters** 3 points 6 months ago

I took a distance education course (PSYC 314) with a Proctorio final last term and they allowed a 5 minute washroom break where you had to announce you were taking a break when you left and when you came back, but you only got that one break. The exam was only 2.5 hours so if yours is longer you might get more breaks.

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[−] **AgreeableLandscape3** `Environmental Sciences` 5 points 6 months ago

Also, this is a big problem: What if your PC doesn't even have a camera or microphone? What if you use an OS that the program isn't compatible with?

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[−] **Navin_Ad** `Arts` 1 point 6 months ago

The program is designed to work on all platforms since it's just a Chrome extension. Give their site a check where they list the details and features of their software: https://proctorio.com/support#minReqs

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> [−] **AgreeableLandscape3** `Environmental Sciences` 1 point 6 months ago
>
> Is it available for Firefox?
>
> permalink embed save parent **give award**
>
>> [−] **Navin_Ad** `Arts` 1 point 6 months ago
>>
>> It doesn't seem like it. It strictly requires you to use it on Chrome.
>>
>> permalink embed save parent **give award**
>>
>>> [−] **AgreeableLandscape3** `Environmental Sciences` 3 points 6 months ago
>>>
>>> Great, I have to install Chrome, which is another program that is awful for privacy.
>>>
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>>>
>>>> [−] **Navin_Ad** `Arts` 1 point 6 months ago
>>>>
>>>> You're never safe from Big Brother Google, even if you don't use Chrome, so...
>>>>
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[−] **AgreeableLandscape3** `Environmental Sciences` 3 points 6 months ago

Another question: What do they do with this data *after* your exam is graded? There is a lot of personal data here including a literal video of you in your house. Are they going to be like Facebook and just keep it forever? Maybe sell it as a side hustle?

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> [−] **Navin_Ad** `Arts` 1 point 6 months ago
>
> If the advertising label for the product is to be believed, they will be doing nothing with your data. The system only allows the course instructor to review the footage, not even the company can get its hands on the footage because of the "military-grade, zero-knowledge encryption." The guarantee that "[their] privacy design means we can't even see your data. There is nothing for us to sell to third parties."
> (Source: https://proctorio.com/support)
>
> As some have already said on this thread, no one will be bothered to check the whole footage of you taking a test. The system will flag suspicious events based on its algorithm, where the instructor can manually review it. Do take this part with a grain of salt, I'm just saying what other people have said about the software. I haven't actually used it myself.
>
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>
>> [−] **AgreeableLandscape3** `Environmental Sciences` 3 points 6 months ago
>>
>> I'm *probably* okay with profs looking at the recording provided that I get assurance that it's permanently deleted within a definite time frame. However, I do not trust the company's claims at all.
>>
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[−] **Silent_Sibilance** 3 points 6 months ago

If they actually flag based on normative movement patterns and don't turn that off for me, I'm totally screwed. Multiple disabilities accommodated by CfA, including digital exams. I write with an adaptive mouse, voice dictation and a second monitor. Also got a healthy dose of clinical ADHD, so pretty much everything is going to look abnormal.

I'm trying to be optimistic and believe that CfA will pull through with some transparent answers and decent accommodations in the next week. If the writing platform isn't confirmed by early next week though, I'm going to be real concerned about proper accommodation and fair evaluation.

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[−] **emeraldvirgo** 3 points 6 months ago

Where are people getting info on this Proctorio thing from? I've looked through all my announcements on Canvas and there isn't anything. Maybe it's just Sauder?

Also, I live literally a block away from VGH. Is it going to flag noises too? ie ambulance, sirens, helicopters, etc.

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> [−] **If_1** `Computer Engineering` 3 points 6 months ago
>
> I think some online only UBC courses use it.
>
> permalink embed save parent **give award**
>
>> [−] **AgreeableLandscape3** `Environmental Sciences` 1 point 6 months ago
>>
>> And quite possibly every course this term.
>>
>> permalink embed save parent **give award**

[−] **asswaterv2** 2 points 5 months ago

the only thing scarier than letting a third party app monitor your surroundings is thinking it's okay to let a third party app monitor your surroundings. refuse. they have to find another way to let you test during the pandemic because as a lot of people have said , we wouldn't be signed up for these classes if we knew about this shitshow of a program

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[−] **bucs_is_fun** `Business and Computer Science` 1 point 6 months ago

Which course is this for?

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[–] **iwishiwasswallowed** `Science` [S] 5 points 6 months ago

Every course potentially

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π

[–] **iwishiwasswallowed** `Science` [S] 5 points 6 months ago

Every course potentially

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⋔ Hybrid Pedagogy

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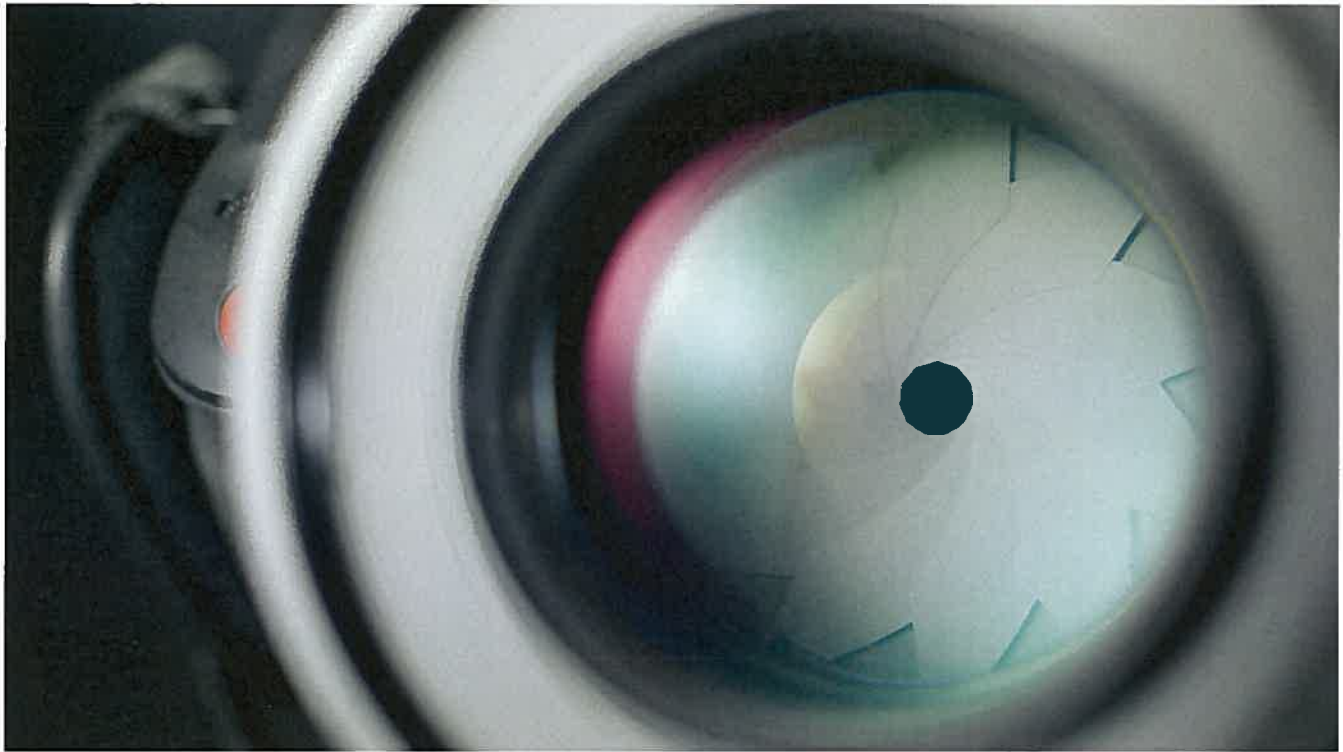
Our Bodies Encoded: Algorithmic Test Proctoring in Higher Education

SHEA SWAUGER · 02 APRIL 2020 · ED-TECH

Cheating is on the rise, we can't trust students, and the best strategy to protect academic integrity is to invest in massive surveillance systems. At least, that's the narrative that ed-tech companies catering to higher education are selling based on their products and marketing campaigns. One of the products that's currently being adopted by colleges and universities is algorithmic test proctoring -- essentially software designed to automatically detect cheating in online tests -- but we haven't had enough critical conversation about what values are embedded in these systems and the potential harm they can cause students. If I take a test using an algorithmic test proctor, it encodes my body as either normal or suspicious and my behaviors as safe or threatening. As a cisgender, able-bodied, neurotypical, white man, these technologies generally categorize my body as normal and safe, and because of this, they would not endanger my education, well-being, employment, or academic standing. The majority of the students on my campus don't share my identities and could have a very different experience being read by test proctoring algorithms. We need to understand the potential ways that algorithmic test proctoring can discriminate against students based on their bodies and behaviors, why higher education is willing to endanger students in the first place, and what we can do about it.

What It Is and Why It's Here

Over the last fifteen years, higher education has been increasing the number of online courses and programs it offers. While the methods for cheating in online classes are often the same as those used in-person, the institutional fear of increased cheating from

online students has encouraged a new and lucrative market for ed-tech companies. Common online cheating methods include using unauthorized information aids while taking a test and/or having someone besides the student enrolled in the class take the test on their behalf, practices that predate both the internet and online tests. While in-person test proctoring has been used to combat test-based cheating, this can be difficult to translate to online courses. Ed-tech companies have sought to address this concern by offering to watch students take online tests, in real time, through their webcams. If the outsourced test proctor sees any evidence of cheating, as defined by the company or the institution, they can flag the behavior to be reviewed later by the course owner. After tests are completed, a course owner will be made aware of any flagged behavior. It is ultimately up to the course owner, not the test proctor, to determine if flagged behavior is a violation of academic misconduct and, if so, how to address it. Some of the more prominent companies offering these services include Proctorio, Respondus, ProctorU, HonorLock, Kryterion Global Testing Solutions, and Examity.

Several companies including Proctorio, Respondus, ProctorU, and others have adapted the outsourced human-proctoring model to include algorithmic proctoring, sometimes called "automated proctoring." Instead of a third party employee watching students take tests individually, tests are recorded, including audio and video of students, and run through internally-developed machine learning algorithms that "watch" each video and flag suspicious behavior in real time. Flagged sections of the test are sent to the course owner who, as before, determines if cheating was present or not. In order to do this, these algorithms require a large dataset to establish a baseline of "normal" bodies and behavior from which to make decisions. In this case, the data are recordings of people taking tests, exhibiting both cheating and non-cheating behavior, and the algorithm is taught by developers which bodies and behaviors are suspicious and which are "normal". At some point, with enough data and modifications, these companies deem their algorithms to be able to accurately identify cheating. While it's unclear exactly how many institutions are implementing algorithmic test proctoring, on the low end we can say there are at least tens of thousands of online tests every month proctored by third parties. From my conversations with representatives from Proctorio and ProctorU, in 2018 they administered about four million algorithmically proctored tests combined.

Potential Harms

Algorithmic test proctoring's settings have discriminatory consequences across multiple identities and serious privacy implications. For example, certain test settings flag loud noises or leaving the view of the camera as suspicious. These settings will disproportionately impact women who typically take on the majority of childcare, breast feeding, lactation, and caretaking roles for their family. Students who are parents may not be able to afford childcare, be able to leave the house, or set aside quiet, uninterrupted blocks of time to take a test. Even though Title IX includes protections for pregnancy and parental status, default test settings like these classify the day-to-day logistics of caring for children and dependents as a threat to academic integrity.

Students with certain medical conditions such as neuromuscular disorders or spinal injuries that prohibit them from sitting for long periods of time, those who need to use the restroom frequently, or anyone who needs to administer medication during a test will be flagged. In order for a student to identify themselves at the beginning of a test, they have to hold their ID stationary in front of their computer's camera and reverse-orient it to a frame on the screen, a task that requires fine motor skills that able-bodied students sometimes struggle with, and which students with certain disabilities may not be able to do. When eye-tracking is used, students with visual impairments such as blindness or nystagmus or students who identify as autistic or neuro-atypical may be flagged. Even common test-taking behaviors such as reading the question out loud, listening to music, or behaviors such as hyperactivity associated with ADHD can be flagged. While there can sometimes be accommodations for things like bathroom breaks, the fact is that most proctoring software's default settings label any bodies or behaviors that don't conform to the able-bodied, neurotypical ideal as a threat to academic integrity.

While racist technology calibrated for white skin isn't new (everything from photography to soap dispensers do this), we see it deployed through face detection and facial recognition used by algorithmic proctoring systems. Students with black or brown skin have been asked to shine more light on themselves when verifying their identities for a test, a combination of both embedded

computer video cameras and facial recognition being designed by and for white people. A Black student at my university reported being unable to use Proctorio because the system had trouble detecting their face, but could detect the faces of their white peers. While some test proctoring companies develop their own facial recognition software, most purchase software developed by other companies, but these technologies generally function similarly and have shown a consistent inability to identify people with darker skin or even tell the difference between Chinese people. Facial recognition literally encodes the invisibility of Black people and the racist stereotype that all Asian people look the same.

At the beginning of a test, these products ask students to verify their identity by matching their appearance with a photo ID. As Os Keyes has demonstrated, facial recognition has a terrible history with gender. This means that a software asking students to verify their identity is compromising for students who identify as trans, non-binary, or express their gender in ways counter to cis/heteronormativity. If a student's gender expression or name on their ID are different from their current gender expression or name, the algorithm may flag them as suspicious. When this happens, they may have to undergo another level of scrutiny to authenticate their identity, an already common and traumatic experience for trans and gender non-conforming students. If these students are not alerted of this possibility before the test begins, it may force them to either discontinue the test and risk their grade, or out themselves to their course owner when they may not want to, risking more trauma and discrimination including being denied financial aid, being forced to leave their institution, or have their lives put in physical danger.

Course owners who use these products are given access to recorded video and audio of their students when they take tests, which can include the inside of students' homes and bedrooms. A common feature of proctoring systems is to allow course owners to download the recordings of their students to keep on a local device, and course owners can view the recordings of their students as many times as they want, when and wherever they want. These features and settings create a system of asymmetric surveillance and lack of accountability, things which have always created a risk for abuse and sexual harassment. Technologies like these have a long history of being abused, largely by heterosexual men at the expense of women's bodies, privacy, and dignity. For example, university professors have used texting and social media to stalk their students, TSA employees targeted women to scan their bodies and share the images, police helicopters recorded people naked and having sex, National Security Agency employees shared sexually explicit photos they intercepted and used wiretapping technology to spy on current or former lovers, civic employees used CCTV to watch women undress in their homes, and domestic abusers used IoT devices to gaslight wives and partners. These are just a few examples, but they represent how toxic masculinity has used technology to abuse women.

Additionally, proctoring systems often record the approximate location of where a student is when taking the test, which if not on campus is often in their homes. Having a course owner know where their students live can be dangerous for students, as is enabling course owners to have unaccountable access to video recordings of their students' bodies and homes.

Why Are We Encoding Bodies?

Given that these products create so much potential harm to students, it raises the question of why universities license them. Even if the risks to students were acknowledged by higher education institutions -- and at present, they aren't -- these companies are offering a product that resonates with several implicit values and practices of higher education that ultimately outweigh the risk to student safety: discriminatory exclusion, the pedagogy of punishment, technological solutionism, and the Eugenic Gaze.

Discriminatory Exclusion

Anytime people from a non-dominant group seek to participate in education, predictable counter arguments emerge that rest on the belief that their inclusion would harm current students, academic standards, productivity, etc. Algorithmic proctoring companies capitalize on colleges' and universities' preexisting discriminatory fears by first stoking those fears and then selling products to alleviate them. Below is an excerpt from a Proctorio promotional video [Editor's note: this video was removed just after the publication of this article.]

> *Online education is moving the world's students into the future at an alarming rate. With the ability to take learning outside the brick walls of our institutions, a vast number of people now have access to education. But this presents a problem of how to maintain academic integrity in a globally competitive job market. Instructors and students alike want to make sure they're on a level playing field when it comes to academic achievements. Proctorio defends your accomplishments by holding dishonest people accountable, all the while protecting your privacy...*

This promotional video plays upon the fear that if we include people not normally inside the "brick walls of our institutions" they will somehow threaten academic integrity. In short, we on the inside are honest, those on the outside are dishonest, and the rate at which "they" are joining "us" is cause for alarm. Proctorio is not an outlier in this; their messaging is representative of how most test proctoring companies market themselves to higher education.

Colleges and universities have a long history of this kind of exclusion. In 1956, a group called the Educational Fund of the Citizen's Council began distributing pro-segregation propaganda claiming that if we allow Black students to attend white schools, Black students will lie, cheat, and generally cause disciplinary problems and the best response to them is increased disciplinary and policing tactics. In "The Case Against Coeducation: An Historical Perspective," Carol K. Coburn outlines some of the biological inferiority arguments given to exclude women from men's only institutions. When Cambridge University held a vote to determine if women should be granted equivalent degrees to men, male students protested by "burning effigies of female scholars and throwing fireworks into the windows of women's colleges." Higher education in the United States has feared including marginalized people from the beginning and test proctoring companies market directly to that fear. Their promotional messaging functions similarly to dog whistle politics which is commonly used in anti-immigration rhetoric. It's also not a coincidence that these technologies are being used to exclude people not wanted by an institution; biometrics and facial recognition have been connected to anti-immigration policies, supported by both Republican and Democratic administrations, going back to the 1990's.

Without having to say so directly, test proctoring companies are communicating *firstly*, that non-traditional students, students of color, international students, and students typically excluded from higher education are threats because they are more likely to cheat and need to be held accountable, and *secondly*, that additional surveillance technology (which they will sell you) would protect your institution from them.

The Pedagogy of Punishment

Algorithmic proctoring companies are the logical fulfillment of higher education's proclivity for disciplinary practices applied to academic integrity in an online environment. Borrowing from Henry A. Giroux, Kevin Seeber describes the pedagogy of punishment and some of its consequences in regards to higher education's approach to plagiarism in his book chapter "The Failed Pedagogy of Punishment: Moving Discussions of Plagiarism beyond Detection and Discipline." The pedagogy of punishment ignores that what constitutes cheating, plagiarism, and citation are culturally constructed, seemingly arbitrary on first approach, and a source of anxiety for incoming students, especially those not acculturated to higher education. When introducing new students to academic conduct policies, we create an environment based on threats and fear, communicate to them that they aren't trustworthy, and that if they break the rules, they will incur severe discipline. We've built up increasingly sophisticated surveillance methods for detecting when students cheat but fail to communicate to them the contextual, political, and historical forces that created our academic practices for citation, evaluation, and testing.

Sean Michael Morris and Jesse Stommel's ongoing critique of Turnitin, a plagiarism detection software, outlines exactly how this logic operates in ed-tech and higher education: 1) don't trust students, 2) surveil them, 3) ignore the complexity of writing and citation, and 4) monetize the data. That last point applies to test proctoring companies as well, but instead of stealing the intellectual property of students, these companies are monetizing data about students' bodies to increase the value of their own intellectual property: their algorithms and software. As a business model, this is an ideal scenario for the private sector. Colleges and universities require students to let companies record their bodies and collect biometric data, which these companies then use to refine their product and sell it back

to universities. In some cases, institutions pass the cost of using the technology to the students who then pay proctoring companies directly, averaging about $25 per test. There isn't a clearer example of surveillance capitalism in education.

Technological Solutionism

Cheating is not a technological problem, but a social and pedagogical problem. Technology is often blamed for creating the conditions in which cheating proliferates and is then offered as the solution to the problem it created; both claims are false. Cheating predates the internet and will not be solved by a tool, a product, or an algorithm, even when that cheating happens online. Our habit of believing that technology will solve pedagogical problems is endemic to narratives produced by the ed-tech community and, as Audrey Watters writes, is tied to the Silicon Valley culture that often funds it. Scholars have been dismantling the narrative of technological solutionism and neutrality for some time now. In her book "Algorithms of Oppression," Safiya Umoja Noble demonstrates how the algorithms that are responsible for Google Search amplify and "reinforce oppressive social relationships and enact new modes of racial profiling." Her body of work includes authoritative critiques of algorithmic bias, technological redlining, and how racism and sexism pervade technology and online culture. Another scholar at the forefront of this conversation is Anna Lauren Hoffmann, who coined the term "data violence" to describe the impact harmful technological systems have on people and how these systems retain the appearance of objectivity despite the disproportionate harm they inflict on marginalized communities. Algorithmic discrimination and data violence can sometimes be more difficult to call out than traditional forms of discrimination and violence, not just because the data and code are kept in a black box of intellectual property, but because people are less likely to believe that data and code are even capable of discrimination and violence in the first place. Lastly, Ruha Benjamin has been developing an abolitionist toolkit using race critical code studies to not only cut through technological solutionist propaganda, but deconstruct the white supremacy that underpins what she coins the "New Jim Code."

The Eugenic Gaze

Algorithmic test proctoring encodes ideal student bodies and behaviors and penalizes deviations from that ideal by marking them as suspicious, which threatens students with academic misconduct investigations and exclusion from the educational community. This system of measuring bodies and behaviors, associating certain bodies and behaviors with desirability and others with inferiority, engages in what Lennard J. Davis calls the Eugenic Gaze. To understand this, let's break down the terms "Eugenic" and "Gaze." Eugenics is an ideology with the goal of improving the genetic quality of humans through the erasure of undesirable traits. While most eugenics programs focus on race, they often expand their list of undesirable traits which have included, "...(1) the feeble-minded; (2) paupers; (3) alcoholics; (4) criminals…; (5) epileptics; (6) the insane; (7) the constitutionally weak; (8) those with specific diseases; (9) the deformed; and (10) the deaf, blind, and mute…" Eugenics programs attempt to remove people who have "undesirable" traits through anti-immigration policies, selective breeding programs, marriage restrictions, forced sterilization, murder, and genocide.

Higher education is deeply complicit in the eugenics movement. Nazism borrowed many of its ideas about racial purity from the American school of eugenics, and universities were instrumental in supporting eugenics research by publishing copious literature on it, establishing endowed professorships, institutes, and scholarly societies that spearheaded eugenic research and propaganda. Those researchers (and often university presidents) went on to promote federal policies that supported eugenics goals in areas as far reaching as immigration, economics, housing, law, and medicine. Roughly 70,000 Americans were forcibly sterilized as a direct result of these policies.

A Gaze, like the Male Gaze or the White Gaze, is a culturally dominant perspective that seeks to create a power difference between a dominant and nondominant group of people by defining the terms through which they are seen, valued, and discussed. Gazes usually share similar features such as unequal power dynamics, surveillance, control, and conformity. The Eugenic Gaze seeks to measure people's bodies and behaviors, compare them to an idealized norm, and either reform people who don't fit that norm through punishment or exclude them from the community altogether. Algorithmic test proctoring uses the Eugenic Gaze by measuring student's bodies and behavior (machine learning and facial recognition software), defining what bodies and behaviors are associated

with the ideal student (cisgender, white, able-bodied, neurotypical, male, non-parent, non-caretaker, etc.), attempts to reform students who deviate from the ideal student (flagging them as suspicious), or exclude them from the community (academic misconduct investigations which can lead to expulsion). The Eugenic Gaze is a combination of white supremacy, sexism, ableism, cis/heteronormativity, and xenophobia. When we apply the Eugenic Gaze using technology, the way we do with algorithmic test proctoring, we're able to codify and reinforce all of those oppressive systems while avoiding equity-based critiques because of our belief in the neutrality of data and technology.

What Do We Do Now?

Don't use algorithmic test proctoring. Instead, focus on pedagogical techniques that you can use to design assessments, online or in person, that draw from personal experience or require students to apply concepts in unique contexts. If you have to use algorithmic test proctoring, make sure students know about the test settings and ID requirement well before they take a test, and assure them that you will not take any behavior flagged as "suspicious" into consideration that isn't described explicitly in the syllabus. Talk with students about academic integrity, not just about the rules and consequences, but the culture that constructed it and how surveillance capitalism and privacy play a role. If students are uncomfortable with algorithmic test proctoring, support and empower them to communicate this to the administration and, where possible, give them the ability to opt-out. Advocate on behalf of students; start a conversation at your institution about what this technology communicates to students who are forced to use it, what values it represents, and how those may be different from the stated values of the institution. Lastly, read Safiya Umoja Noble, Anna Lauren Hoffmann, Ruha Benjamin, Audrey Watters, and Os Keyes. Each of these scholars offers important analyses and critiques of technology, but also a vision for how it can be used towards justice and care; they've helped me understand and continue to give me hope.

Conclusion

Algorithmic test proctoring is a collection of machine learning algorithms that reinforce oppressive social relationships and inflict a form of data violence upon students. It encodes a "normal" body as cisgender, white, able-bodied, neurotypical, and male. It surveils students and disciplines anyone who doesn't conform to "normal" through a series of protocols and policies that participate in a pedagogy of punishment, ultimately risking students' academic career and psychological, emotional, and physical safety. Companies that build these technologies are able to exploit higher education's proclivity for discrimination because academia is still afraid of letting the wrong people in. Technology isn't neutral or objective, it didn't cause cheating, and it won't ultimately stop it. It is, however, able to encode and amplify discriminatory beliefs and cast them into invisible and powerful systems that can harmfully impact our choices and our bodies.

Cathy O'Neil writes:

> Big Data processes codify the past. They do not invent the future. Doing that requires moral imagination, and that's something only humans can provide. We have to explicitly embed better values into our algorithms, creating Big Data models that can follow our ethical lead. Sometimes that will mean putting fairness ahead of profit.

Collectively, higher education has failed to embed ethical values into educational technology. Algorithmic test proctoring, and many technologies like it, sacrifice student agency in favor of discriminatory exclusion, the pedagogy of punishment, surveillance capitalism, technological solutionism, and the Eugenic Gaze. Educators have an obligation to object, resist, and subvert these systems, to push towards a practice that embodies justice, liberation, and love, and to remain vigilant for the next technological "solution" that promises to "fix" students or education.

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Examining the Relationship Between Student Test Anxiety and Webcam Based Exam Proctoring

Tammi Kolski
Central Michigan University
kolsk1td@cmich.edu

Jennifer Weible
Central Michigan University
weibl1jl@cmich.edu

Abstract

With increased pressures on maintaining a stellar academic performance for future academia or occupational possibilities, students may suffer test anxiety at some point in their higher education journey. For decades, empirical, observational, research has been conducted to determine the psychological and physiological effects of test anxiety. This exploratory research examines the in-situ behaviors displayed by students while taking online course exams through use of a virtual proctor and how that relates to student self-reported indications of test anxiety. While the top ten behaviors observed to occur most frequently (e.g., directional change in gaze, furrowed eyebrows) do not align with reported physiological responses of test anxiety, the findings of this exploratory research can prepare instructors for what behaviors they can expect to see from their students while taking virtual proctored exams. In interviews, students self-identified behavioral coping skills used while taking their exams. This unexpected finding was consistent with the behaviors demonstrated by students and invites the opportunity for instructors to incorporate material within their eLearning courses that will help students become calmer while taking their online exams.

Introduction

Across the span of their education, students have taken examinations as an evaluation of their abilities and accomplishments, often with increased pressures to have superior performances for future academic admissions or occupational possibilities. As a result, 38.5% of students will suffer from test anxiety at some point over the course of their higher education career (Gerwing, Rash, Gerwing, Bramble, & Landine, 2015). Test anxiety is a multidimensional construct that has been defined as "a set of phenomenological, physiological, and behavioral responses during an evaluation situation" (Zeidner, 1998, p. 17) that invoke "an unpleasant feeling or emotional state that has physiological and behavioral concomitants" (Dusek,1980, p. 88). The Test Anxiety Inventory (TAI), a self-report instrument, measures worry and emotionality (Ali & Moshin, 2013) and has been used to assess test anxiety in high school and college-aged students with the intention of helping develop effective coping skills.

Along with an increasing awareness of test anxiety, the prevalence of eLearning (also referred to in literature as "online learning" or "web-based distance education") has become an accepted means of delivering quality, accessible education to students (Li & Irby, 2008) while allowing education providers to increase efficiency and retain students (Wolff, Wood-Kustanowitz, & Ashkenazi, 2014). In the eLearning environment, virtual proctoring of exams is more prevalent (Sanjoe, n.d)

and can provide a level of security for exam integrity similar to a human proctor in live proctoring locations (Bedford, Gregg, & Clinton, 2009).

The research is deep in identifying test anxiety in primary and secondary education students (Ergene, 2003; Talbot, 2016); it is less so in reporting the prevalence of test anxiety among college students (Gerwing et al., 2015), particularly in online learning settings. With 13 consecutive years of growth in students taking eLearning courses, and yearly increases of 3.9% (Allen & Seaman, 2016), this is problematic. Therefore, in this exploratory study, we seek to explore the connections between higher education students' behaviors during recorded virtual exam sessions and text anxiety with the aim of developing pedagogical recommendations for online instructors.

Literature Review

In this literature review, the focus will be on three areas. The first will review test anxiety in students with an emphasis on the physiological behaviors identified in clinical trials consistent with test anxiety. The second area will discuss the use of the Test Anxiety Inventory in measuring students' self-report of test anxiety. The third area will examine the purposeful use of virtual proctoring in the eLearning academic environment.

Test Anxiety in Students

Students who experience test anxiety likely do not develop this condition once they are in college. Between 10% to 30% of students started to experience physical, emotional and behavioral indications of test anxiety when they were in elementary school (King & Ollendick, 1989). Often treatment is not sought (Ergene, 2003) until reaching high school when students may come to understand that their behaviors are related to test performance and seek help (Hill & Wigfield, 1984). Still, many learners struggle with test anxiety into their college years (Gerwing et al., 2015).

Both the psychological and physiological effects of test anxiety on academic performance are wide-ranging and have been found to lower motivation and impair cognitive performance as well as inhibit academic performance (Chapell et al., 2005; Chin, Williams, Taylor, & Harvey, 2017; Peleg-Popko, 2004). Studies on cognitive anxiety and exam performance showed that an increase in anxiety can have either a positive or a negative effect on students' academic performance—a small increase in anxiety could increase performance, whereas a large increase in anxiety could lower the students' performance levels drastically (Humara, 1999). Examining 188 senior high school students from New Zealand, Chin et al. (2017) concluded that "test anxiety accounts for approximately 5–10% of the variance in exam grades" (p. 1). Several factors can influence a student's test anxiety including perception of understanding content, lack of time management skills, academic pressures, and other personal factors including self-efficiency and self-control of thoughts, actions, and emotions (Duraku, 2016). Additionally, exam taking can become a major source of anxiety when the scores serve as gate-keepers to future opportunities and career pathways (Peleg-Popko, 2004) because of greater student expectations and pressures from their parents and schools to perform well.

Physiologically, anxiety can negatively affect academic performance; "the emotional component describes the tension that students have during the test, which is manifested through muscle tension, accelerated heart rate, nervousness, or sweaty palms" (Asghari, Abdul Kadir, Elias, & Baba, 2012, p.4), as well as experiencing perspiration, dry mouth, and muscle spasms (Harris & Coy, 2010). In addition, anxious students may experience nausea, dizziness, and panic before, during, and even after a test (Talbot, 2016). Weinberger, Schwartz, & Davidson (1979) conducted research on the behaviors displayed in a college classroom by 201 undergraduate male students and concluded the following physiological reactions occurred when a student reported experiencing test anxiety: forehead tension (as evidenced by furrowed eyebrows), perspiration or sweating, shortness of breath/irregular breathing, pursed lips, clenched jaw, and motor agitation (gross or minor as

evidenced by restlessness or fidgeting).

Test Anxiety Inventory (TAI)

Test anxiety has been studied formally since George Mandler and Seymour Sarason (1952). Throughout the decades, psychologists have continued researching the symptomology, causes, and treatments of test anxiety, predominantly conducting studies in clinical, experimental designs. The TAI is a self-reporting questionnaire measuring the degree of test anxiety a person experiences as a situation-specific personality trait (Spielberger, 1980) and is one way that test anxiety can be quantified. While there are at least eight other inventories for self-assessment of test anxiety, Ali and Moshin (2013) conducted a meta-analysis of the TAI, concluding that the TAI was considered a valid and a reliable measure of test anxiety when used with high school students, undergraduate college students, and graduate college students.

Exam Proctoring in eLearning

To meet the needs of today's college students, many institutions are incorporating eLearning courses into their program offerings. Even when overall higher education enrollment is declining, eLearning enrollment has continued to grow (Allen & Seaman, 2016). With this increase, educators question how to maintain academic rigor while holding all students to the same standards of academic integrity, particularly within online course exams. Many institutions offering eLearning programs are concerned about academic security and are implementing virtual proctoring software because of its low cost, functionality, and protection against academic dishonesty behaviors of their students when taking online exams (Baron & Crooks, 2005; Bedford et al., 2009; Karim, Kaminsky, & Behrend, 2014).

Few studies have examined the effect of virtual proctoring on students when taking exams. Karim et al. (2014) found that remote proctoring did not directly affect test-taker reactions and performance, but it did decrease instances of cheating. Research by Romero-Zaldivar, Pardo, Burgos, & Delgado Kloos (2012) on second-year engineering students at a Madrid university identified how virtual recording tools can capture the minutiae of an event taking place within the students' learning experience. Their research outcomes supported that using virtual proctoring tools makes the online exam-taking environment an ideal forum to observe student test-taking behaviors, stating, "the detailed observation of the student activities in their course workspace offers a reliable framework to predict their academic achievement" (Romero-Zaldivar et al., 2012, p. 1065).

In using a virtual proctor, the webcam focuses on just one student and is more neutral, detached, and uninterrupted than a human proctor (Marcus, Raul, & Ramirez-Velarde, 2008). Respondus Monitor, one such virtual proctor option, requires that students' complete exams in front of a computer-mounted or manufacturer-installed webcam and provides the instructor with live streaming images of the student and their environment while taking the assessment ("Respondus", n.d.). Knowing that the instructor will be reviewing their recorded exam session can affirm for the students the importance of academic integrity and being ethical in their exam-taking efforts. St. Clair (2015) suggested the use of a sample test to model the use of virtual proctoring software, to address problems, and reduce eLearning student anxiety.

There is scant research on the relationship between test anxiety and behaviors, particularly in online learning. Having been well researched in clinical trials, there is little empirical research on test anxiety and test-taking behaviors during human proctored exam sessions. Much of the research conducted on student behavior during online exams has examined behaviors in the context of large standardized tests such as the ACT, LSAT, or GRE (Camara, 2002) and not classroom contexts. In addition, the research has focused primarily on issues of cheating and exam security, rather than on student exam-taking actions or non-cheating-related behaviors (Kerton & Cervato, 2014). Additionally, there is no research to date that captures in situ behaviors of students taking a virtually

proctored exam or any correlation between behaviors during these exams and indicators of test anxiety.

As more students enroll in eLearning courses, the need for exam proctoring to provide a quality educational experience and maintain academic rigor rises in importance. With the pressures felt by higher education students that perpetuate increased amounts of worry and emotionality, as well as the additional stress of the unfamiliar proctoring of exam sessions for academic integrity reasons, higher learning students could experience greater test anxiety reactions than is reported in the literature.

Methodology

To address the lack of research on test anxiety and virtual proctoring, this exploratory study investigates the following research questions:

> 1. How do the behaviors displayed by higher education students during their web invigilated proctored exam session align with their Test Anxiety Inventory outcome score?
> 2. Was there a correlation between the higher education students' observed exam scores and the Test Anxiety Inventory outcome score?
> 3. How do eLearning students' perceptions regarding physiological test anxiety reactions parallel with their observed behaviors during the web invigilated proctored exam session and their Test Anxiety Inventory outcome score?

Participants and Setting

The participants were eLearning students from a large public four-year university in the Midwest and a community college in the Midwest (a two-year institution). All students were enrolled in one of Author One's 2014-2017 undergraduate psychology courses (14 courses total) that had concluded prior to the exam-taking sessions being viewed for this research. Each course included four or five exams. After each course ended, written consent was obtained from participants to include their recorded exam sessions and their TAI results in the study, as well as participate in an interview. Participants were advised, as a part of their consent, that partaking in this study would not compromise their academic standing at either institution. Student demographic data was removed from all recordings and reportings and each was assigned a random number for identification of the participant. The actual names of students were replaced with fictitious names.

Tools and Instruments

Test Anxiety Inventory. This study utilized the Test Anxiety Inventory (TAI) as a self-report measure of text anxiety. Consisting of 20 questions, students responded to each question based on a 4-point Likert type scale consisting of four options: (1) Almost Never, (2) Sometimes, (3) Often and (4) Almost Always. The completed Test Anxiety Inventory (TAI) surveys were calculated for the total and the two subscales (Worry and Emotionality) scores.

Virtual Proctoring System. Both higher education institutions in this study had a contract with Respondus, Inc. for use of Respondus Monitor as a virtual proctoring tool. All Respondus Monitor recordings of the participants' exam-taking sessions were embedded within the LMS used by the institutions for course delivery. At the start of each exam, during the mandatory setup steps prior to the exam being activated, the student acknowledged the use and purpose of Respondus Monitor. The next steps validated student authentication, requested a 360-degree environment scan and a webcam check, and finally required an acknowledgment that the student understood the parameters of the web invigilated exam session, including the institutions' policies on academic integrity.

Observation Matrix. The observational protocol was developed prior to this study (Kolski & Weible, in review). The observation matrix consisted of behavioral indicators of test anxiety (e.g., furrowed eyebrows, perspiration, deep breathing, pursed lips, motor agitation) found in traditional college classrooms (Weinberger et al., 1979). In addition, student behaviors (e.g., rubbing lips with fingers, reading exam questions, shifting eye gaze, propping of the head) were added based on Author One's four years of experience with reviewing recorded exam sessions, plus the ability to document unexpected behaviors that were displayed.

Interview. Structured interviews with students were conducted using open-ended questions designed to understand the students thinking about their recorded, virtual proctored, exam-taking experience. Included were questions about their perceptions of behaviors displayed while taking exams as well as their insightfulness regarding test anxiety.

Data Collection

At the start of each course, students were given the opportunity to choose either a human proctor or a virtual proctor for completing their course exams with 88% (238 out of 272) of these students selecting the Respondus Monitor tool for virtual proctoring of each of their course exams. Students who made the decision to use an approved testing center location and/or a human proctor were excluded from this research population. From consented students (n=37), approximately 60 hours of video was obtained and stored. Video recordings of exam sessions were assigned a number for data entry and analysis purposes. Following the course's conclusion, all consented students (n=21) completed the TAI survey and five interviews were completed with students who had high, middle, and low TAI scores.

Observational data was collected by examining 25.43 hours of archived video recordings of students as they took their virtual proctored exams; the recording of the first exam for each student and a second randomly selected recording of one of the subsequent exams. When initiating the virtual proctoring, 100% of the students acknowledged understanding the purpose and use of Respondus Monitor as a form of securing exam integrity. 82% of the students showed pictured identification which was consistent with the person seen on the recording; others neglected to show identification. 84% completed the environmental scan slowly so a clear visualization of the student's workspace being free from books, notes, or electronic devices was obtained.

Data Analysis

For the video analysis, the observational protocol was used to quantify observed behavioral data. The frequency counts of observed behaviors from the coding matrix, exam scores, and the TAI scores were statistically analyzed using descriptive statistics, parametric inferential statistics, and correlation procedures to examine the relationships between the quantified observational data, exam scores, and the TAI scores. Of the 40 behaviors included on the observational protocol (see Table 1), the most prevalent 23 behaviors (indicated in bold font) were included in the data analysis.

Table 1

Behaviors Included on the Observational Protocol

*Audible Sigh	Coughs	Leans Backward from Camera	Reads Question Out Loud
Chews on Clothes	Cracks Knuckles/Neck/Back	Leans Inward Toward Camera	Relaxed Posture
Chews on Fingers	Deep Breathing	Leans Sideways	Rigid Posture
Chews on Objects	Eyebrows Furrowed	Lip Licking or Lip Biting	Rubs or Picks at Lips with Fingers
Chews or Smokes	Eyebrows Raised	Lip Reads	Scratches Some Part of Head/Face
Chews Other	Eyes Squinted	Moves Head Left/Right	Smiles or Smirks
Clears Throat	Eyes Widen	Moves Head Up/Down	Squirms or Shifts in Seat
Closes Eyes	Gaze Shifts to Left	Perspires	Stretches
Consumes a Beverage	Gaze Shifts to Right	Props Head with Hand(s)	Twists or Plays with Hair
Consumes Food	Gazes Upward	Pursed Lips	Yawns

* Behaviors in bold font were included in the descriptive statistical analysis.

The interviews were transcribed and coded using a priori codes based on test anxiety literature as well as allowing for emerging codes. These coded segments were compared with the student's observed behaviors and their TAI results.

Results

Of the 37 participants in this study, 92% were female (n=34) and 8% were male (n=3). Students were from both a two-year community college (n= 13, 35%) and a four-year university (n=24, 65%) who completed their eLearning course exams using the Respondus Monitor virtual proctor technology. The length of time a student took to complete their exam ranged from 10 minutes to 49 minutes, with the average length of time being approximately 23 minutes (M=23.17 minutes, SD=8.84).

Relationship Between Behaviors, TAI Score, and Exam Score

The ten most frequently observed behaviors were: eye gaze shifting to the right, propping their head with their hand, scratching some part of the head or face, lip licking or lip biting, rubbing or picking at the lips, shifting or squirming in their seat, pursed lips, eyebrows furrowed, lip reading the exam questions, and moves head left/right (See Figure 1). The behaviors of overt perspiration, chewing or smoking tobacco, and demonstrating a rigid posture, as noted by Weinberger, Schwartz, & Davidson (1979), were not observed in any of the students' recorded exams.

Figure 1

Ten Most Frequently Observed Behaviors
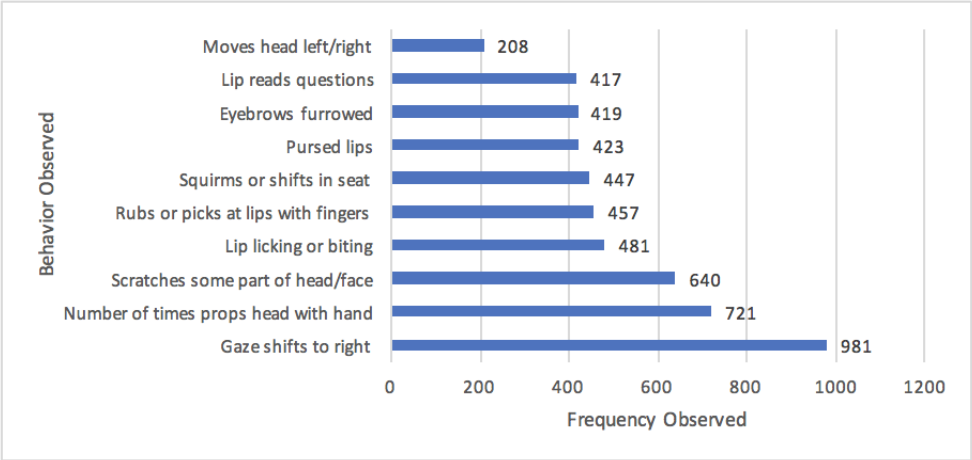
To examine the relationship between the participants' TAI total score and the top ten most frequently observed behaviors, a Pearson correlation coefficient was conducted (see Table 2).

Table 2

Relationship Between the Participants' TAI Total and Each of the Top Ten Observed Behaviors

Correlations

		Total TAI score	Gaze shifts to right	Props head with hand	Scratches some part of head/face	Pursed Lips	Rubs or picks at lips	Lip licking or biting	Squirms or shifts in seat	Eyebrows Furrowed	Moves head left/right	Lip Reads Questions
Total TAI score	Pearson Correlation	1	0.172	0.038	0.273	-0.086	0.179	.600**	-0.198	0.144	0.186	0.248
	Sig. (2-tailed)		0.456	0.870	0.232	0.711	0.437	0.004	0.389	0.534	0.420	0.278
Gaze shifts to right	Pearson Correlation		1	0.041	-0.040	0.114	0.057	0.230	0.208	-0.015	-0.136	.332**
	Sig. (2-tailed)			0.758	0.764	0.386	0.666	0.078	0.110	0.912	0.298	0.010
Props head with hand	Pearson Correlation			1	.582**	-0.072	.569**	-0.021	.359**	0.226	-0.066	0.161
	Sig. (2-tailed)				0.000	0.584	0.000	0.876	0.005	0.082	0.616	0.218
Scratches some part of head/face	Pearson Correlation				1	-0.034	.470**	0.208	0.231	0.173	-0.010	0.224
	Sig. (2-tailed)					0.798	0.000	0.111	0.076	0.186	0.942	0.085
Pursed Lips	Pearson Correlation					1	0.048	-0.029	0.233	.496**	0.167	-0.035
	Sig. (2-tailed)						0.717	0.827	0.073	0.000	0.202	0.791
Rubs or picks at lips	Pearson Correlation						1	0.133	.379**	.345**	0.225	.257*
	Sig. (2-tailed)							0.312	0.003	0.007	0.084	0.047
Lip licking or biting	Pearson Correlation							1	-0.019	0.043	0.191	.602**
	Sig. (2-tailed)								0.886	0.742	0.144	0.000
Squirms or shifts in seat	Pearson Correlation								1	0.207	0.059	0.159
	Sig. (2-tailed)									0.113	0.654	0.225
Eyebrows Furrowed	Pearson Correlation									1	.302*	0.109
	Sig. (2-tailed)										0.019	0.409
Moves head left/right	Pearson Correlation										1	0.229
	Sig. (2-tailed)											0.078
Lip Reads Questions	Pearson Correlation											1
	Sig. (2-tailed)											

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

A moderate, positive correlation was found between the TAI total score and the behavior of lip licking or biting [$r(19)= .600$, $p<.01$], indicating a moderately significant association between the behavior of lip biting or licking and a moderate total score on the TAI. Of the ten behaviors that were used for data analysis, no other behaviors showed to have a significant correlation at the $p=0.05$ (2-tailed) level when compared to the TAI total score.

Table 3

Furrowed Eyebrow Behaviors as a Predictor of Increased TAI Total Score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	750.243	1	750.243	5.238	.034[b]
	Residual	2721.567	19	143.240		
	Total	3471.810	20			

a. Dependent Variable: Total TAI score
b. Predictors: (Constant), Eyebrows Furrowed

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	41.783	3.739		11.176
	Eyebrows Furrowed	1.236	.540	.465	2.289

A one-way ANOVA was also calculated by comparing the participants' total TAI score based on each of the 23 observed behaviors used for data analysis (see Table 3 and Table 4). A significant difference was found among the furrowed eyebrow behavior $[F(1,19) = 5.238, p<.05]$ and the behavior of lip licking or biting $[F(1,19) = 8.043, p<.05]$ and the student having an increased TAI total score.

Table 4

Lip Licking or Biting Behaviors as a Predictor of Increased TAI Total Score

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1032.553	1	1032.553	8.043	.011[b]
	Residual	2439.257	19	128.382		
	Total	3471.810	20			

a. Dependent Variable: Total TAI score
b. Predictors: (Constant), Lip licking or biting

Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
1	(Constant)	40.017	3.722		10.753
	Lip licking or biting	.602	.212	.545	2.836

To examine the relationship between the participants' observed exam score and their TAI total score a Pearson correlation coefficient was conducted. A moderate, negative correlation was found between the observed exam score and the total TAI score $[r(19)= -.503, p<.05]$ indicating the higher the exam score is moderately associated with lower values of the TAI total score.

A final Pearson correlation was calculated examining the relationship between the participants' observed exam score and the 23 observed behaviors that were used for data analysis. A weak positive, statistically significant correlation was found between the observed exam score and the behavior of eyebrows furrowing $[r(58)= .326, p<.05]$ indicating a slight association between the behavior of furrowed eyebrows and a higher score on the observed exam score. A weak negative, statistically significant correlation was found between the observed exam score and the behavior of

lip biting or licking [r(58)= -.324, p<.05] indicating a slight association between the increased behavior of lip licking or biting and a lower score on the observed exam score. A moderate, statistically significant negative correlation was found between the observed exam score and the behavior of clearing their throat [r(58)= -.499, p<.01] indicating that the increased behavior of clearing the throat was associated with a lower score on the exam. No other behaviors were found to have a significant correlation at the p=0.05 (2-tailed) level compared to the observed exam score.

Student Interviews

Of the five students who partook in structured interviews regarding their perceptions of test anxiety and behavioral indicators for test anxiety, two students' TAI total (T) score were at the 92nd percentile rank or higher (T > 61); two students' TAI total (T) score were at the 36th percentile rank or lower (T < 35); and one student's TAI total (T) score was at the 57th percentile rank (T = 39). When asked if the students were self-aware about test anxiety, each responded congruently with what their TAI total score represented. Both TAI high scoring students (Val and Emily) identified "knowing since being young" that they felt anxious when taking tests. Per Emily, "as I got older [middle school or early high school] I put a label of test anxiety on it".

Connections Between Behavior and Test Anxiety

By examining the interviews, behaviors, and TAI scores, connections between behaviors, TAI scores, and perceived test anxiety of students were found. From this analysis, several themes emerged:

- Test anxiety more often appeared as motor agitation;
- Behaviors can indicate cognitive processing;
- Students are self-aware of the behaviors they exhibit while taking tests; and
- Instructors can incorporate strategies within their courses to help students reduce anxiety.

Motor agitation as an indicator of test anxiety. Five of the top ten behaviors observed are classified as a form of motor agitation (propping their head with their hand, scratching some part of the head or face, rubbing or picking at the lips, shifting or squirming in their seat, and moves head left/right). Val, who self-reported experiencing test anxiety responses (TAI=62), shared "I'm sure there are many things I do without even acknowledging them". Emily, who also self-reported experiencing test anxiety (TAI=76), offered the greatest insight about her physiological responses of test anxiety, "I would scratch my head or face or neck, I would pull up at my shirt collar or if I was wearing a necklace I'd fidget with the necklace. If I had a clicky pen I'd click it". These results indicate that some form of motor agitation as an observed behavior can happen in response to test anxiety.

Behaviors indicate cognitive processing. During the interviews, two students – both who scored low on the TAI indicating a lack of test anxiety - acknowledged they were likely to be seen reading the exam questions. Robin, who did not self-report experiencing test anxiety responses (TAI=27), stated "[you saw] me thinking, [meaning] me reading questions to myself". Bethany, who did not self-report experiencing test anxiety responses (TAI=28), stated "you probably saw me talk to myself. I talk to myself a lot. I'll read the questions and think out loud through reading the questions". These results indicate that the observed behavior of lip reading questions is a cognitive processing behavior more than a behavioral indication of test anxiety.

In addition, Bryan acknowledged the shifting of his gaze as "I probably had a lot of eye motions … it's my way of thinking. If I'm looking away from the screen for a bit, it is likely because I don't know the answer very well to that question or it calms me down to answer the question better." When queried further, Bryan stated, "I know the software is good at detecting if you were to do stuff so there isn't anything more I could do [in front of the camera] than what wouldn't be done in front

of the teacher." These results indicate that a directional change in the students' gaze while taking their exam can be used as a cognitive processing or visual distraction coping skill rather than a behavioral indicator of academic dishonesty.

Self-awareness in students. When all students were queried if there were specific behaviors they recalled having demonstrated during their virtual proctored exam, their responses were consistent with what was observed on their individual exam recordings. Per Bethany, "I'll lip read or actually read the questions out loud." Val stated, "I take a deep breath or stretch." Also, Bryan said, "I probably shifted my eyes from the screen to look out the window beside me". Students were also asked if they used any coping mechanisms for staying calm while taking exams. Bethany, who scored low on the TAI (28), stated, "I talk through my thinking". Robin, who also scored low on the TAI (27), shared, "if I know it, I just answer and move on. If I don't, I'll make a note of that question number and then move on and come back once I reach the end. If I still don't know it, well then I don't". Bryan, as noted above, who had a middle TAI score (39), commented, "If I'm looking away from the screen … it calms me down to answer the question." Both Val and Emily, who had high TAI scores (62 and 76 respectively) acknowledged "taking a deep breath" to help calm themselves down, with Emily adding, "my coping was to fidget".

Teacher strategies to reduce test anxiety. During the analysis, a final theme emerged: teacher pedagogical strategies such as allowing behavioral coping skills and including content to familiarize students with virtual proctoring technology can lessen students' anxiety while taking online exams. First, flexibility in allowing students to identify problematic behaviors and suggest solutions can reduce their anxiety. The behavioral coping mechanisms students demonstrated while taking their virtually proctored exams could be identified by the instructor as problematic. Understanding and allowing these, however, were found to support the students while taking their exams. The students interviewed identified the following exam-taking coping skills, which were also observed to have been demonstrated in their recorded exam sessions: per Emily, "my coping was to fidget"; per Val, "take a deep breath, stretch and just try to slow down my thinking as I read the question"; and per Robin, "taking notes on questions and writing down questions". Considering the students were not to have any notes, books, or electronic resources near their computer when taking the exam, the two students interviewed (Robin and Emily) who referenced taking notes had communicated with Author One prior to taking the first exam about what could be done to allow this behavior. A plan was discussed that the student would show the blank paper to the camera at the start of the exam to ensure that no additional material was available to the student.

Second, implementing clear directions and routine procedures were also effective pedagogical strategies. Two of the students stated that content embedded into Author One's eLearning course was helpful for reducing their anxiety. Emily, who self-reported experiencing high test anxiety, stated, "I am not technology savvy, but you gave us simple directions to follow and that made me less nervous". Or per Bryan, "you made it smooth and it was easy to set up … with Respondus I didn't have to [download] each time. When I was ready to take a test, I could just enable the lockdown browser and take the test. I loved the convenience." These statements indicate how instructors can implement measures to help students reduce test anxiety when utilizing virtual proctoring for assessments within online courses.

Discussion

Empirical research indicated that overtly perspiring or shortness of breath/irregular breathing were primary indicators of test anxiety (Weinberger, Schwartz, & Davidson, 1979). In this study, these indicators were not found. However, lip licking and biting, motor agitation, and eyebrows furrowed, previously identified as signs of test anxiety (Asghari et al., 2012; Harris & Coy, 2010; Weinberger et al., 1979), were prevalent. In addition, students reported that these behaviors were consistent with their feelings of test anxiety. For example, Emily, who scored high on the TAI, further supported this finding when she was observed, and she also stated, that she consciously engaged in multiple

behaviors consistent with motor agitation while taking her exams. Although we found a moderate, positive correlation between elevated TAI score and the behavior lip licking or biting, more research is needed in this area for generalization to a larger population.

In alignment with Lufi, Okasha, and Cohen (2004), our outcomes indicated that higher TAI scores correlated with lower test scores. In addition, we found a connection between furrowed eyebrows and increased exam scores, while lip licking or biting and clearing the throat were correlated with lower exam scores. While the TAI has been studied in experimental or observational classroom settings (Ali & Mohsin, 2013; Chapell et al., 2005; Ergene, 2003; Gerwing et al., 2015; Lufi et al., 2004; Peleg-Popko, 2004), others have not examined the relationship between exam scores and the TAI in eLearning, specifically with the use of virtual proctoring. Our study expands the range of its use with findings that are consistent with prior research.

With the behavior most frequently observed in this study being the student's gaze shifting to the right, an assumption could be made that any change in the student's gaze (e.g., right, left, upward, or downward) might suggest they were cheating. However, the review of each student's 360-degree environment scan revealed no electronic devices or print material nearby that may have provided assistance in answering their exam questions. Additionally, Bryan's comments indicate that the virtual proctor is an incentive to not cheat. Furthermore, his observed gaze shifting behaviors were indicators of cognitive processing and coping mechanisms. Although changes in the direction of gaze could indicate academic dishonesty, instructors need to investigate fully before drawing conclusions. While no academic integrity violations were found in this study, the purposeful use of virtual proctoring is to secure academic integrity standards (Baron & Crooks, 2005; Karim et al., 2014). These can best be achieved when instructors follow through on behavioral indications consistent with cheating taking place.

Implications

Instructors within eLearning courses using virtually proctored exams can use multiple tactics to help address students' needs and best support their exam-taking abilities. Some suggested strategies are:

> 1. Early in the course, develop open lines of communication between the instructor and students about exam-taking concerns (e.g. wanting to use paper and pencil while taking an exam);
> 2. Include opportunities for students to become comfortable with the virtual proctoring software in advance of the first course exam (e.g., use of a no-risk quiz); and
> 3. Discuss behaviors with students prior to assuming that academic impropriety has occurred.

As noted by Bryan and Emily, having prior practice and protocols about the use of virtual proctor technology helped reduce their anxiety and provided them with a better exam-taking experience. This aligns with previous findings (St. Clair, 2015) in which the use of a sample-quiz was found to be an easy, yet effective, best practice for reducing eLearning students' test anxiety. In addition, building into eLearning courses simple instructions for using virtual proctoring software or websites can help reduce technology concerns for students that could foster higher levels of anxiety. This emerging finding of behaviors demonstrated by students that are consistent with self-identified coping skills while taking exams invites the opportunity for instructors to incorporate material within their eLearning courses that will help students become calmer while taking their eLearning course exams.

Conclusions

With college students having to cope with academic performance pressures, it is of interest for instructors and educational researchers to understand what behaviors students are demonstrating

while taking virtual proctored exams. The use of virtual proctored exams allows researchers to observe for indications of test anxiety through a different lens compared to what is offered in the existing literature. To help students who display behaviors consistent with test anxiety cope better, instructors can incorporate effective test-taking strategies into their eLearning courses that can positively influence the students' academic performance (Talbot, 2016).

For the instructors questioning if virtually proctored exams would increase anxiety in eLearning students, the results of this study do not support that assumption. Instead, a greater case can be made that virtual proctoring best meets the convenience, cost, and flexibility needs of eLearning students identified by Shea and Bidjerano (2014). As more students are enrolling in eLearning courses (Allen & Seaman, 2016), the time is ripe for dialog about resources that could be included to educate students on strategies for decreasing anxiety reactions while taking their virtually proctored exams.

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21st Century Assessment:

Online Proctoring, Test Anxiety, and Student Performance

Daniel Woldeab[1] and Thomas Brothen[2]

[1] *Metropolitan State University – College of Individualized Studies*

[2] *University of Minnesota – Department of Psychology*

Abstract: It is safe to say that online leaning has found a permanent place in higher education. Conventional higher education institutions are also gradually embracing it across the United States. As online learning surfaces as the new model of contemporary education both in the United States and worldwide, ensuring exam integrity in the online environment is becoming a major challenge to many higher education institutions. To meet this challenge, many of these institutions are outsourcing the examination aspect of their education to online proctoring service providers. The present study, which was conducted on a total of 631 students, assesses the effect of online proctored exams on student test anxiety and exam performance. This study shows that high trait test anxiety results in lower exam scores and that this is especially true for those students with high text anxiety taking exams in an online proctored setting.

Keywords*:* online proctoring, learning, test anxiety, worry, emotionality.

Résumé : On peut affirmer sans risque que l'apprentissage en ligne a trouvé une place permanente dans l'enseignement supérieur. Les établissements d'enseignement supérieur conventionnels l'adoptent également progressivement aux États-Unis. Alors que l'apprentissage en ligne apparaît comme le nouveau modèle de l'éducation contemporaine tant aux États-Unis que dans le monde entier, assurer l'intégrité des examens dans l'environnement en ligne devient un défi majeur pour de nombreux établissements d'enseignement supérieur. Pour relever ce défi, bon nombre de ces établissements confient l'aspect examen de leur formation à des fournisseurs de services de surveillance en ligne. La présente étude, qui a été menée sur un total de 631 étudiants, évalue l'effet des examens en ligne surveillés sur l'anxiété des étudiants et leur performance aux examens. Cette étude montre que lorsque le niveau d'anxiété détecté par le test est élevé, les résultats d'examen sont plus faibles et que cela est encore plus fort pour les étudiants dont l'anxiété est élevée qui passent des examens dans un contexte de surveillance en ligne.

Mots-clés : surveillance en ligne, apprentissage, test d'anxiété, inquiétude, émotivité

Introduction

Online learning is an integral part of contemporary education in the United States, and globally. A 2011 study conducted by Ambient Insight Research indicates that over 1.25 million students took all their courses online (Adkins, 2011). The 2018 Babson Survey Research Group report shows that between 2015 and 2016 over 30% of post-secondary students—or 6.5 million—took at least one course online; the majority of these students, almost 70%, were from public institutions (Seaman, Allen & Seaman, 2018). Likewise, a 2018 Canadian study based on over 200 higher education institutions, indicated a significant growth in online learning, with those institutions increasing their online offerings by 11% (Bates, 2018). Indeed, Bhagat, Wu and Chang (2016) reported that online learning integrated with social network connectivity is providing students and educators with an ecosystem of interaction and troves of learning resources. This is in part because online learning allows students the convenience and flexibility to better fit their studies in with their work and other obligations and, as Mann and Henneberry (2012) show, many of those enrolled in online courses are of typical college age, i.e., 18-24.

Although the role of technology in the teaching and learning environment is well established and goes back centuries, the recent rapid development of information and communication technologies has made the role of educational technology in teaching even more important (Stošić, 2015). In a 2013 study Harden asserted that given our advancements in information technology, the college classroom itself has in part become virtual. Certainly, technology can significantly improve the learning experience of students – bringing concepts and curricula to life in new ways (Woldeab, Lindsay & Brothen, 2017).

A number of scholars (e.g., Carey, 2016; DeMillo, 2011) have stressed that the centuries-old models upon which US higher education is based is inadequate for the twenty-first century, and that information technology is capable of providing quality and affordable forms of higher education. However, this shift has its own challenges. While it might be true that the new paradigm gives conventional higher education institutions an opportunity for growth and the ability to expand their course offerings, it is also posing a challenge in how to best ensure exam integrity. Therefore, this study aims to fill the following research gap: while online proctoring may provide a solution to the question of exam integrity, the negative effects of such an intrusive type of monitoring on students and exam performance are not yet well known.

Review of Related Literature

Online Proctored Assessments

As conventional higher education institutions broaden their online offerings, more and more students are taking their exams online (Stowell & Bennett, 2010). This trend is not limited to online offerings either. As far back as 2001 Alexander, Bartlett, Truell, and Ouwenga noted that many educators in traditional face-to-face courses were also moving their exams online, among others, to save time grading and to free up class time. This trend pointed to the need for maintaining academic integrity through proctored online assessments.

Hylton, Levy and Dringus (2016) state that "deception and dishonesty in online exams are believed to link to their unmonitored nature where users appear to have the opportunity to collaborate or utilize unauthorized resources during these assessments" (p. 53). Likewise, Faucher and Caves (2009) stressed that academic dishonesty most often happens when students have opportunities to cheat because of reduced surveillance. Indeed, the Witherspoon, Maldonado and Lacey (2012) study showed that nearly 80% of those surveyed were involved in academic misconduct; the same researchers noted that those involved indicated that they would engage in misconduct if the opportunity arose. On the other hand, Karim, Kaminsky and Behrend (2014) concluded their review by warning of the unintended negative effects on test takers when remote proctoring is used to reduce cheating.

Test Anxiety

As every aspect of education requires some kind of assessment, students throughout their education journey are expected to have their learning measured in a variety of ways. The results are used not only to gauge their gains in knowledge but also the effectiveness of the instruction itself and the overall viability of programs and curricula (Salend, 2009). However, these assessments can also subject students to test anxiety, which can negatively impact their performance (Huberty, 2009).

Studies on test anxiety go back to the early 20th century, with the first one published in 1914 by Folin, Denis and Smillie. Almost four decades later many more studies emerged on test anxiety and its connection to performance (e.g., Liebert & Morris, 1967; Morris, Davis & Hutchings, 1981; Sarason, Mandler, & Craighill, 1952) leading to the present distinction between state and trait anxiety. For example, Mandler and Sarason (1952) used responses on a test anxiety survey to characterize research participants as having either high or low test anxiety, and found that students with low test anxiety did much better on intelligence tests than students with high test anxiety.

Early studies in this area theorized test anxiety to be one-dimensional (e.g., Sarason, 1961). However, that understanding shifted in the late 1960s, as *state test anxiety* was understood to contain elements of

worry and emotionality. Indeed, Hong and Karstensson (2002) noted that "state test anxiety refers to the transitory, anxious affect state provoked by a specific evaluative situation, while trait test anxiety refers to the tendency to be anxious in any evaluative situation" (p. 349). Contrary, *trait test anxiety* can differ in its intensity, extent, and the range of circumstances in which it happens and consequently is the more general condition. Individuals with test anxiety are typically considered to have the more narrowly-defined state test anxiety; this means that their elevated levels of stress are situation specific, as they are the result of certain evaluative activities, or conditions, such as difficulty of the material or the student's lack of preparedness (Cassady, 2009). On the other hand, researchers have found that students who display greater trait anxiety experience higher state test anxiety than students with lower trait anxiety (Head, Engley & Knight, 1991). In this research study, because of the difficulty of assessing students' individual situations, we used a more general trait measure to assess students' test anxiety and then determine its relationship to test performance.

Test Anxiety and Online Proctored Examinations

In an educational assessment setting, test anxiety may often distort and disguise the true abilities of students (Meijer, 2001). However, the understanding around online proctored examinations and test anxiety is very limited. In fact, our literature search looking into proctored online exams and test anxiety was unfruitful. The few studies in this area have to do with unproctored exams (e.g., Stowell & Bennett, 2010), or with online exams defined as students testing in a secure computer laboratory (e.g., Cassady & Gridley, 2005) and suggest that online exams are better for students with high test anxiety.

For example, the Stowell and Bennett (2010) study looking into the use of course management software to conduct face-to-face class exams online (i.e., unproctored online exams) found that students who typically show high levels of test anxiety in a classroom had less anxiety when taking their exams online, while the opposite was true for students showing low classroom anxiety. Similarly, the study of Cassady and Gridley (2005), which compared students who took their exams using paper and pencil and those online (i.e., in the computer laboratory), found that students who took their exams online reported lower levels of perceived test anxiety.

Conversely, the present research study builds on a preliminary study conducted by Woldeab and others in 2017, which suggested that one of the main concerns students have about online proctoring is proctor intrusiveness. More specifically, the purpose of this current study is to assess if actual online proctored exams induce higher levels of test anxiety and result in lower student performance.

Method

Participants

This study looked at 631 undergraduate students attending a large midwestern US university. The data was collected from a large introductory psychology course with three types of sections: face-to-face, online, and hybrid. Data collection took place during the fall and following spring semesters. These students completed all the relevant measures we used in this study and also gave their consent for us to use their data. Of the total of 631, 44 students took their final exam via ProctorU (PU group) and served as the "experimental" group. The remaining 587 took their exams in the computerized testing center (TC group) and thus served as the "control" group. We therefore report our findings derived from both the experimental and the control groups, who took both the pre- and the post-surveys.

Students taking their exams with ProctorU, an online proctoring service provider, took their exams individually by signing up online and coordinating their exam time with ProctorU staff. They were monitored by ProctorU staff via a webcam. Those who took their exams through the proctored computer testing center did so in the presence of their peers and were monitored by the testing center staff.

Participation in this study was entirely voluntary. Research participants were provided a consent form, which gave specific information about the study, including the purpose as well as the risks and benefits of their participation. Research participants were asked to electronically sign the consent form both before the pre-survey and before the post-survey. To encourage participation in the study, the faculty of the participating courses agreed to give two extra course points to those surveyed.

Measures

To assess reactions to proctored online examinations, participants were given pre- and post-surveys that measured their overall expectations about and reactions to proctored online examinations. For this study, we examined student responses to the post-survey item asking them to rate – on a scale of comfortable to uncomfortable – their experience of being monitored by a proctor.

To measure participants' trait anxiety, we used the Westside Test Anxiety Scale developed by Driscoll (2007). The 10-item scale was developed to assess performance impairments. Most of the questions in this scale directly address performance impairments related to cognitive symptoms of anxiety, i.e., lack of attentiveness, poor memory, or worry. According to Driscoll (2007), the scale consists of six items assessing impairment, and four items assessing worry and dread. The questionnaire includes no items on physiological over-arousal. In fact, the "Westside scale thus has high face validity, in that it includes the highly relevant cognitive and impairment factors but omits the marginally relevant over-

arousal factor" (Driscoll, 2007, p. 2). Numerous studies have shown repeatedly that lower scores in the Westside scale are related with better test performance, which shows the scale to be a reliable and valid measure (Driscoll, 2007).

To ensure we were measuring participants' trait anxiety rather than anxiety about an impending exam, the Westside measure was administered in the pre-survey during the first week of the semester. Also for this study, we focused on the final survey questionnaire item that asked students whether and to what extent the ProctorU proctors made them uncomfortable. Finally, we used participants' ACT scores, GPAs, and cumulative final grade as control measures.

Results

In this study, we set out to explore online proctoring and test anxiety, specifically whether: a) high test anxiety students report difficulties with online proctoring, and b) online proctored exams induce higher levels of test anxiety and result in lower student performance. A total of 631 students completed all the relevant measures we used in this study and also gave their consent for us to use the resulting data.

As noted above, a total of 44 of these students took their final exam monitored by ProctorU and served as the "experimental" (PU) group. The remaining 587 took their exams in the computerized testing center and thus served as the "control" (TC) group. Because we did not randomly assign students to experimental and control groups, we assessed their scores on five variables relevant to our study's purpose that would indicate if the groups were comparable: the Westside Anxiety scale; final exam performance; ACT scores; GPA; and total credits completed (see Table 1).

Table 1: Group Means

Group	n	GPA	ACT	Comp Cr	Anxiety	Exam
Testing Ctr	587	3.35	27.39	48.46	28.33	156
ProctorU	44	3.30	26.16	59.98	28.48	155

First, we examined students' scores on the Westside Anxiety scale. Both groups had nearly identical scores—differing by about two hundredths of a standard deviation and obviously not statistically different from each other. Second, final exam performance between the two groups differed by only one point out of a possible 200 (155 vs 156) and was also obviously non-significant. Thus, the two central variables of interest in this study did not differ overall between the two groups. As to our concern for getting a clear picture of the effect of online proctoring on exam performance, we found

no indication that trait test anxiety and academic ability differed between our two comparison groups and therefore skewed the results.

We next examined students' scores on the Comprehensive portion of the American College Testing college readiness assessment (ACT), their cumulative grade point averages (GPA), and their cumulative college credits completed (CCR), all obtained from the registrar's office. The GPAs of the two groups also did not differ practically or statistically (3.30 vs 3.35). However, the groups did differ on the two other variables. TC students had higher ACT scores ($M = 27.39$, $SD = 3.15$) than PU students ($M = 26.16$, $SD = 3.61$), and this difference was statistically significant by t-test ($t = 2.09$, $p = .037$). Conversely, PU students had completed more credits ($M = 59.98$, $SD = 40.94$) than TC students ($M = 48.46$, $SD = 32.72$) and this difference was also significant ($t = 2.22$, $p = .027$). For the purposes of this study, we argue that these differences balance out somewhat because academic ability can be assessed with either of these measures. That interpretation is supported by the finding reported above that final exam performance between the two groups did not differ. Together, these findings provide support to the contention that the PU and TC groups were similar in important ways so that the different exam environments can be assessed accurately.

Overall, we found a relationship between trait test anxiety as measured by the Westside scale, and students' exam performance ($r = -.167$ $p = .000$); not surprisingly, we found higher anxiety was associated with lower exam scores, just as decades of research on test anxiety has found. More importantly, this relationship was stronger for PU students ($r = -.443$, $p = .003$) and we found in a test for differences between correlations that this difference was marginally significant ($z = .47$, $p = .06$).

In a closer examination of our data, we found that the greater relationship for trait test anxiety and poorer final exam performance among the PU students was mostly restricted to those with high anxiety scores. High anxiety PU students (scores at the median score of 29 and higher) performed less well on the exam than those below the median (High anxiety $M = 144.62$, $SD = 24.83$; Low anxiety $M = 162.25$, $SD = 24.63$; $t = 2.52$, $p = .015$). Finally, the high anxiety PU students' reactions to the online proctors suggest why this was the case. Students reported that proctors made them uncomfortable (i.e., had lower scores on the comfort scale) more so than those with a mean anxiety score below 29 (High anxiety $M = 2.09$, $SD = .868$; Low anxiety $M = 2.67$, $SD = 1.02$; $t = 2.00$, $p = .052$). Thus, we found strong indications that online proctoring had a negative effect on students with high anxiety.

Discussion

Our review of the literature did not reveal a significant body of previous studies in which to situate our findings. As demonstrated by our review, there are very few studies in the realm of online

proctoring specifically relating to the nexus of test anxiety and exam performance. The few studies we came across do not deal with online proctoring (i.e., webcam monitored examinations—especially those using live proctors). Online proctoring is relatively new and systematic research has not yet caught up with this technology. We therefore assert that more research in this area is needed—some of which we report here—and draw three conclusions from our review of the literature and our data. First, it seems clear that online learning will continue to grow and that this will increase the need for online testing. Second, we found little prior research on how the significant move to online testing in higher education affects different types of students. Third, the results from this study support the findings of a preliminary study conducted by Woldeab and others (2017), which indicated that an area needing further research is online test anxiety. Consistent with previous research showing that high trait anxiety interferes with exam performance, students in this study had lower scores if their anxiety levels were high, but this effect was greater for those students in the online proctoring group who reported high trait test anxiety.

In the research reported here, we have identified an issue that seems to have escaped the attention of researchers studying online learning—test anxiety. The particular effect we found combines what may be a general wariness of technology with some students' fear of testing. The fact that students showed practically no difference in their final exam scores, when comparing online proctoring with in-person testing, indicates that the negative effects of online proctoring may generally be hidden. But these negative effects appeared when we examined the scores of students with high trait test anxiety. Further inspection found this online proctor effect—that having a live proctor watching them was most upsetting to the high anxiety students and that it interfered with their exam performance—to be in line with a preliminary study conducted by Woldeab and others (2017). We found evidence for a person-situation interaction—that test anxiety interacted with the testing situation and resulted in those students who were monitored by an online proctor obtaining lower scores if their anxiety was high. This interaction resulted in some students being disadvantaged by a common feature of online test monitoring services.

Conclusions

The findings of this study should pave the way for further exploration in this area and help us expand our understanding of how online proctoring affects the important relationship of student anxiety to exam performance. Certainly, further research in this area would help more students to be successful. However, perhaps more important is that we have identified a need that college and university counseling centers should address in their programming, and that instructors should consider when using online proctoring: the general wariness of technology combined with students'

fear of testing makes online proctored exams very difficult for some students, in particular those who already exhibit trait anxiety.

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Authors

Daniel Woldeab is an assistant professor in the College of Individualized Studies at Metropolitan State University. He holds a bachelor's degree in computer information systems, a master's degree in education and a doctoral degree in Work and Human Resource Education (adult education). His research interests include online education, adult literacy and adult education, technology and pedagogy, technology and culture, cultural competency, acculturation, and acculturative stress and anxiety. E-mail: daniel.woldeab@metrostate.und.edu

Thomas Brothen is Morse-Alumni Distinguished Teaching Professor in the Department of Psychology at the University of Minnesota-TC and holds bachelor's and PhD degrees in psychology. His primary research has involved developing and examining online course management systems and other technology to improve post-secondary student learning; the teaching of psychology and how technology can be utilized to improve it; and the use of psychological theory to guide large-scale educational interventions. Email: broth001@umn.edu. Email: broth001@umn.edu

Accessibility concerns in Proctorio

Several settings may pose accessibility issues. Keyboard-only users (using standard keyboard navigation and input functions) and students with visual impairments (who are using a screen reader) will most likely be presented with barriers or issues that may cause problems or increased frustration.

Proctorio Settings That May Cause Issues

The following Proctorio settings have been identified as barriers for students who rely on screen readers.
- Record Room – This feature requests that the student rotate the laptop to show the entire room to ensure they are alone and there are no notes or other aids available.
- Auto ID Check – This requires students to hold a photo ID up to the camera so it can be captured. They have to position the ID so that it shows within a frame on the screen.
- Verify Signature – If this is enabled, students need to use a mouse, trackpad, or stylus to sign a blank at the bottom of the screen. As currently implemented, this does not work at all with screen readers.

Excusing a Student from a Proctorio Test

If a student is able to take a regular Canvas test, but not one using Proctorio, they can be easily excused altogether from using the app.

Canvas Exam Flexibility List FINAL

This is Exhibit G referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia
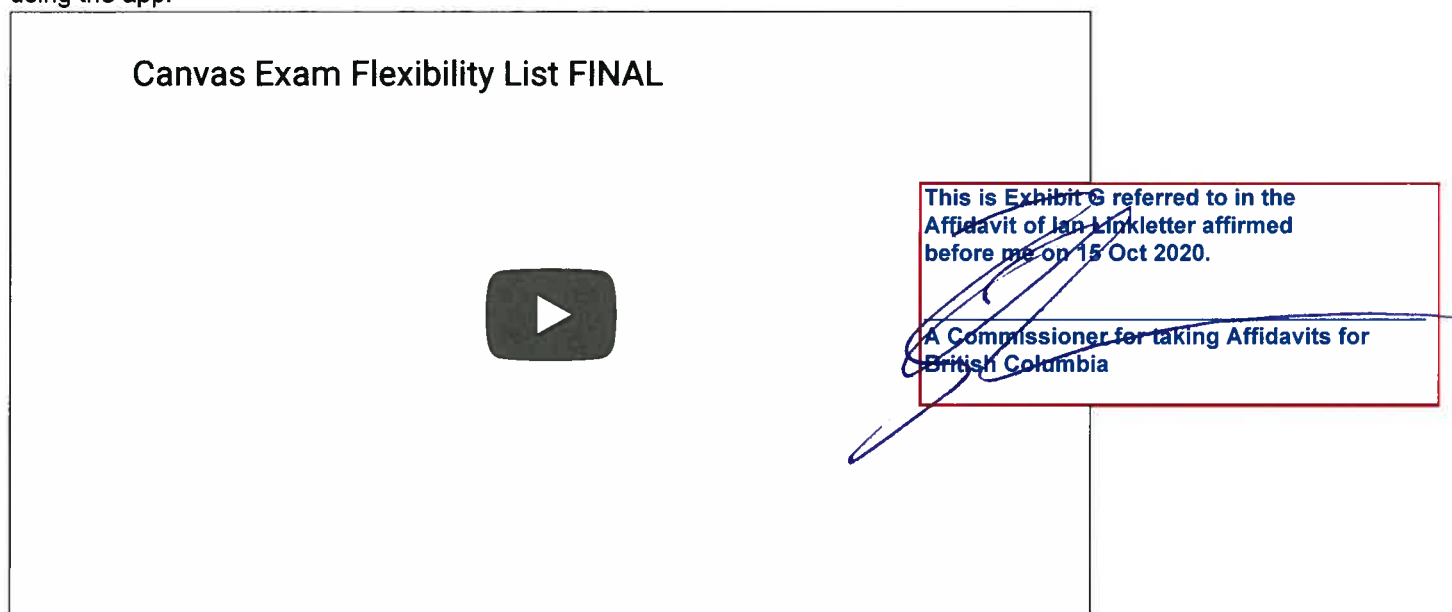
To excuse a student from using Proctorio

1. Go to the test in a **Chrome browser (https://www.google.com/chrome/)** with the **Proctorio Extension (https://getproctorio.com/)** installed.
2. Click on **Moderate Quiz**.
3. Locate the student's row in **Moderate Quiz**.
4. Click the checkbox in the Proctorio column at the far right.
5. Click the blue **Change Proctorio Access Settings** button near the bottom.

6. Copy the **Exam Password** Proctorio generates. The quiz will be still be password protected, and this will need to be given to the student.

Keyboard Navigation

Students who rely on keyboard navigation will not be able to use Proctorio. You may exempt students from having to use Proctorio. Some features of Proctorio will not work with some screen readers. The Signature, ID Card, and Room Scan options should not be used if you need to use Proctorio for students with vision impairments. They will also encounter issues with Face Verification.

To allow students to bypass using Proctorio

1. Go to the quiz or test in your course
2. Click **Moderate Quiz**
3. In the far right column, uncheck the box for any students you need to exempt from Proctorio

Canvas Exam Flexibility List FINAL

For some students, other alternative means of taking the test may have to be provided. Please contact your disability services office for assistance.

Creating an Accessible Test

Another approach would be to change Proctorio settings that cause problems. Instructors may disable settings for students needing accommodations. This could be done in a copy of the test, assigned just to specific students.

To make a copy of the quiz

1. In Quizzes, find the line with the Quiz you want to copy
2. Click on the three-dot menu at the end of that row
3. Choose Copy
4. Choose the course you wish to copy to, most likely the one you are in
5. Choose a module in which to place it if you wish
6. Click Copy
7. The process is not instantaneous and may require one- to two-minutes to complete.

Assign the copy to the student(s)

1. Navigate to the copy and click **Edit**.
2. Scroll down to the **Assign** section at the bottom of the page.
3. Click the **X** by Everyone and choose the student from the list. If the student does not appear immediately, type the first letters of their first or last name until they appear, then select.
4. Fill in the **Due** date, and, if desired, the **Available** from and **Until** dates.
5. Optional: scroll up and change the time limit on the test.
6. Click the **Save** button

Edit the Proctorio settings

1. In Google Chrome with the Proctorio extension enabled, navigate to the copy of the test and click **Edit**.
2. Click **Proctorio Settings**.
3. For students with visual disabilities, disable at least **Record Room, Auto ID Check,** and **Verify Signature.**
4. For students who lack web cameras, disable at least **Verify Video**, **Record Video**, and **Capture ID**. If a student lacks a microphone, also disable **Verify Audio**, and **Record Audio**.
5. Click **Save and Publish**.

Contact

- For general Proctorio questions, email teachingtools@umsystem.edu
- MU students needing accommodations should contact the **Disability Center (https://disabilitycenter.missouri.edu/)** at **disabilitycenter@missouri.edu (mailto:disabilitycenter@missouri.edu)** or 573-882-4696.
- UMKC students needing accommodations should contact **Student Disability Services (https://info.umkc.edu/disability-services/)** at **disability@umkc.edu (mailto:disability@umkc.edu)** or 816-235-5612.
- UMSL does not presently have Proctorio available.
- Missouri S&T students needing accommodations should contact **Student Disability Services (https://dss.mst.edu/)** at **dss@mst.edu (mailto:dss@mst.edu)** or 573-341-6655.

Modified on: Mon, Jun 15, 2020 at 12:20 PM

Proctorio campus support

✉ **teachingtools@umsystem.edu (mailto:teachingtools@umsystem.edu)**

More articles in Proctorio

- **Proctorio (/support/solutions/articles/11000084097-proctorio)**
- **Determining if Proctorio is right for my class (/support/solutions/articles/11000084298-determining-if-proctorio-is-right-for-my-class)**
- **Initially setting up Proctorio (/support/solutions/articles/11000084254-initially-setting-up-proctorio)**
- **Adding Proctorio to a Canvas Quiz (/support/solutions/articles/11000091391-adding-proctorio-to-a-canvas-quiz)**
- **Teaching tips for Proctorio (/support/solutions/articles/11000086046-teaching-tips-for-proctorio)**
- **Understanding the Proctorio gradebook (/support/solutions/articles/11000084208-understanding proctorio-gradebook)**

- **Adding a Proctorio Syllabus Statement (/support/solutions/articles/11000084321-adding-a-proctorio-syllabus-statement)**
- **Preparing students to take a test with Proctorio (/support/solutions/articles/11000084323-preparing-students-to-take-a-test-with-proctorio)**
- **Proctorio's privacy policies (/support/solutions/articles/11000084764-proctorio-s-privacy-policies)**
- **Accessibility concerns in Proctorio (/support/solutions/articles/11000085024-accessibility-concerns-in-proctorio)**

See all 16 articles (/support/solutions/folders/11000015240)

eLearning Training sessions

- Sep 24 9:30am **Delivering Lecture Content with Panopto on PCs (https://calendar.missouri.edu/event/delivering_lecture_content_with_panopto_on_pcs_9505? utm_campaign=widget&utm_medium=widget&utm_source=Mizzou+Events)**
- Sep 24 10am **Canvas Assignments, Quizzes, and Grades (https://calendar.missouri.edu/event/canvas_assignments_quizzes_and_grades_8226? utm_campaign=widget&utm_medium=widget&utm_source=Mizzou+Events)**
- Sep 24 10am **Zoom Overview for Instructors (https://calendar.missouri.edu/event/zoom_overview_for_instructors_5676? utm_campaign=widget&utm_medium=widget&utm_source=Mizzou+Events)**

Temporary Remote Course Instruction effective Wednesday, Sept. 23

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University of Colorado **Boulder**

This is Exhibit H referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

_____
A Commissioner for taking Affidavits for
British Columbia

Office of Information Technology

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Proctorio

⊘ *Last Updated: 09/18/2020*

FEATURES   **COST**   **WHO CAN GET IT**   **GET STARTED**   **SUPP**

Features

Proctorio is being provided to all instructors for exam proctoring. Proctorio enables instructors to utilize machine learning and facial detection technology to remotely proctor exams to help discourage cheating. Proctorio scans a student's ID and face, and then uses Canvas to verify the student's identity. Then, Proctorio captures audio, motion, and systemic changes while the student takes their exam to identify suspicious behaviors. Additional features include:

- Customizing the rules for each exam, including exempting individual students from using Proctorio
- Flagging suspicious behavior for subsequent review by the instructor to determine if cheating has occurred

Should I use Proctorio?

Proctorio allows students to complete an assessment at a remote location, such as their home, while helping to ensure the integrity of the exam. It provides a degree of assurance that test-takers are the individuals they claim to be, while significantly deterring misconduct.

While there are benefits to using Proctorio as we teach and learn remotely, it is important to consider whether Proctorio is appropriate to use for your exam. Learning remotely, in addition to

taking exams remotely, has caused added stress on students. Introducing a new technology, which some find invasive, as a part of exams may add to this stress. OIT is hosting several Proctorio training sessions to show faculty how to effectively use this service.

If you decide to move forward with using Proctorio, please review our Proctorio Instructor tutorials, as well as the Instructor FAQ page.

Accessibility

Proctorio is not accessible to individuals who are blind, low vision, use the keyboard only, and some individuals who have difficulty with mobility. These students should be offered an alternative testing environment. These students would face insurmountable problems if forced to use Proctorio, specifically with being able to complete Proctorio's System Diagnostic Test and pre-check processes.

Contact dsproctor@colorado.edu for support with proctoring alternatives if a student registered with Disability Services contacts you to request alternate testing arrangements.

For other questions about accessibility and accommodations in Proctorio, please reach out to a student's Access Coordinator or contact Disability Services at dsproctor@colorado.edu.

Cost

Proctorio is a common-good service to the campus, which means there is no direct cost to you or your department.

Who can get it?

This service is available to all faculty and students at CU Boulder. Proctorio is available to all non-Leeds Summer 2020 Canvas courses. Review the Set up Proctorio for a Quiz in Canvas tutorial for more information.

Get Started

Faculty

- Review OIT's Proctorio instructor tutorials:
  - Set up Proctorio for a Quiz in Canvas
  - Set up a Practice Quiz
  - Post-exam Review

- - Exempt a Student from Using Proctorio (Recommended Method)
    - Exempt a Student from Using Proctorio (Alternative Method)
  - Attend a training to learn how to use Proctorio
  - Visit the Proctorio Instructor FAQ page for additional guidance
  - Use OIT's Sample Syllabus Statement to inform students of your plan to use Proctorio

Students

- Review OIT's Proctorio Getting Started for Students tutorial to make sure you're prepared for the exam
- Visit the Proctorio Student FAQ page for additional guidance
- Review Proctorio's Minimum System Requirements before you begin

Support

- Proctorio provides 24/7 support online at support@proctorio.com, via chat, or by phone at 480-428-4089 or 1-866-948-9248.
- Proctorio publishes information about issues users may have (e.g., slowness, outages). You can access this information on their Website Uptime page.
- Attend one of OIT's Proctorio training sessions to learn first-hand about this service.
- Contact the IT Service Center for additional assistance at oithelp@colorado.edu or 303-735-4357.

Instructions / Tutorials

Proctorio - Exempt a Student from Using Proctorio (Alternative Method)
Proctorio - Exempt a Student from Using Proctorio (Recommended Method)
Proctorio - Getting Started for Students

Proctorio - Getting Started for Students

Proctorio - Post-Exam Review

Proctorio - Set up a Practice Quiz

Proctorio - Set up Proctorio for a Quiz in Canvas

Feedback

THE C**O**NVERSATION

Academic rigour, journalistic flair

A new study compares the press photos of NBA players. Isaiah J. Downing-USA TODAY Sports

Emotion-reading tech fails the racial bias test

January 3, 2019 6.23am EST

Facial recognition technology has progressed to point where it now interprets emotions in facial expressions. This type of analysis is increasingly used in daily life. For example, companies can use facial recognition software to help with hiring decisions. Other programs scan the faces in crowds to identify threats to public safety.

Unfortunately, this technology struggles to interpret the emotions of black faces. My new study, published last month, shows that emotional analysis technology assigns more negative emotions to black men's faces than white men's faces.

This isn't the first time that facial recognition programs have been shown to be biased. Google labeled black faces as gorillas. Cameras identified Asian faces as blinking. Facial recognition programs struggled to correctly identify gender for people with darker skin.

My work contributes to a growing call to better understand the hidden bias in artificial intelligence software.

Measuring bias

To examine the bias in the facial recognition systems that analyze people's emotions, I used a data set of 400 NBA player photos from the 2016 to 2017 season, because players are similar in their clothing, athleticism, age and gender. Also, since these are professional portraits, the players look at the camera in the picture.

Author

Lauren Rhue
Assistant Professor of Information Systems
and Analytics, Wake Forest University

ensure fairness to all groups because facial recognition, like most artificial intelligence, is often invisible to the people most affected by its decisions.

🏷 **Artificial intelligence**   **Race**   **Inequality**   **Emotions**   **Facial recognition**   **Data**   **Basketball**   **African Americans**   **You might**
Racial bias   **Black**   **also like**
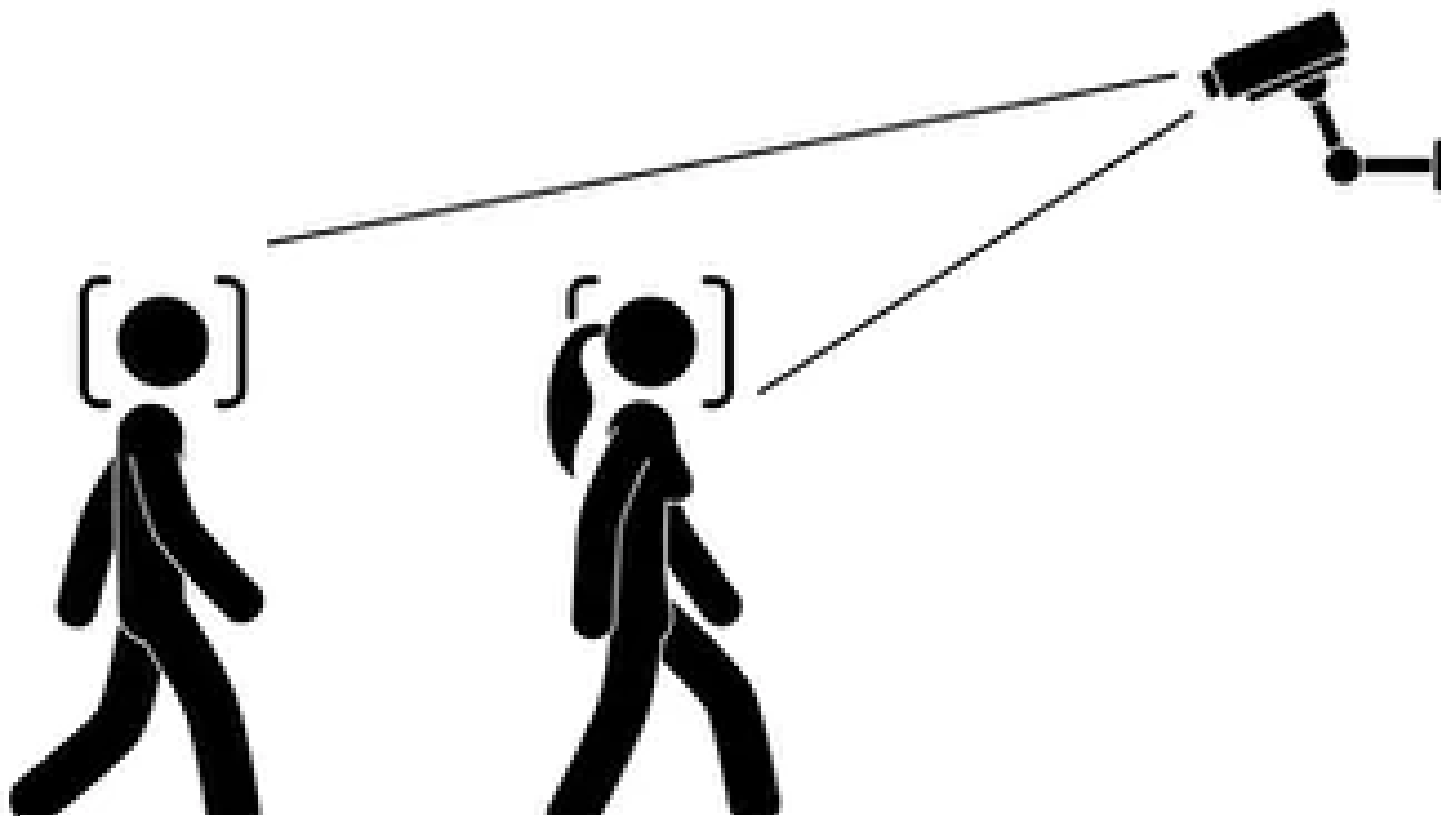
Gender is personal – not computational

I ran the images through two well-known types of emotional recognition software. Both assigned black players more negative emotional scores on average, no matter how much they smiled.

For example, consider the official NBA pictures of Darren Collison and Gordon Hayward. Both players are smiling, and, according to the facial recognition and analysis program Face++, Darren Collison and Gordon Hayward have similar smile scores – 48.7 and 48.1 out of 100, respectively.

However, Face++ rates Hayward's expression as 59.7 percent happy and 0.13 percent angry and Collison's expression as 39.2 percent happy and 27 percent angry. Collison is viewed as nearly as angry as he is happy and far angrier than Hayward – despite the facial recognition program itself recognizing that both players are smiling.

Basketball players Darren Collision (left) and Gordon Hayward (right). basketball-reference.com

Face++

Face++ rated the emotions on facial expressions of basketball players out of 100. Black faces were, on average, rated as angrier and unhappier than white faces.

	White	Black
Fear	1.156	4.839
Surprise	3.770	7.401
Anger	2.149	4.800
Disgust	10.299	10.967
Sadness	1.772	1.863
Neutral	17.749	19.198
Smile	50.189	56.674
Happy	52.301	61.654
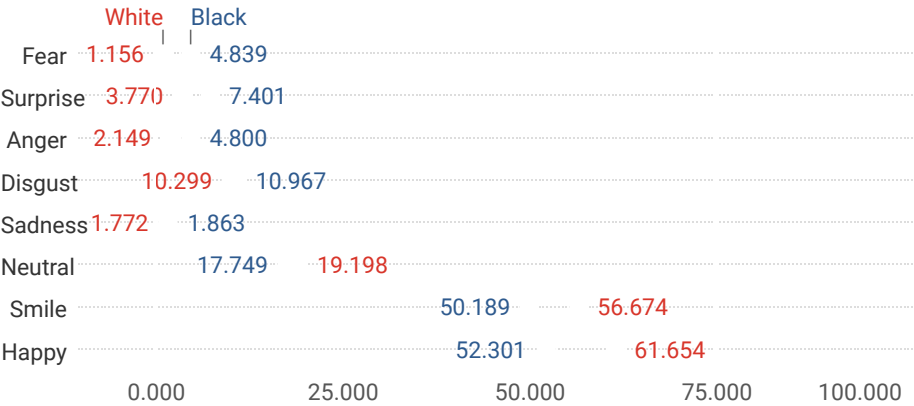
In contrast, Microsoft's Face API viewed both men as happy. Still, Collison is viewed as less happy than Hayward, with 98 and 93 percent happiness scores, respectively. Despite his smile, Collison is even scored with a small amount of contempt, whereas Hayward has none.

Across all the NBA pictures, the same pattern emerges. On average, Face++ rates black faces as twice as angry as white faces. Face API scores black faces as three times more contemptuous than white faces. After matching players based on their smiles, both facial analysis programs are still more likely to assign the negative emotions of anger or contempt to black faces.
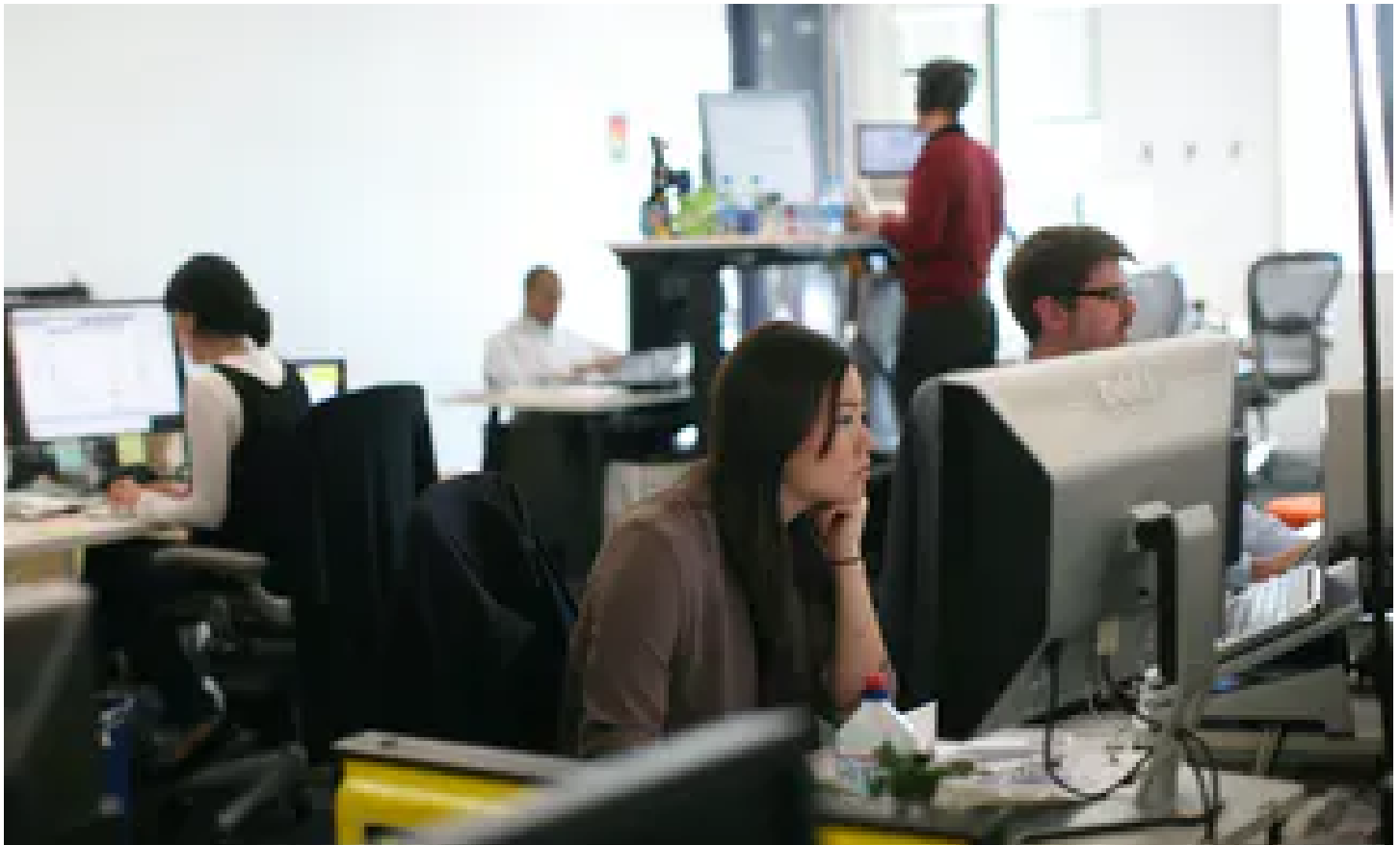
Tech companies spend big money on bias training – but it hasn't improved diversity numbers
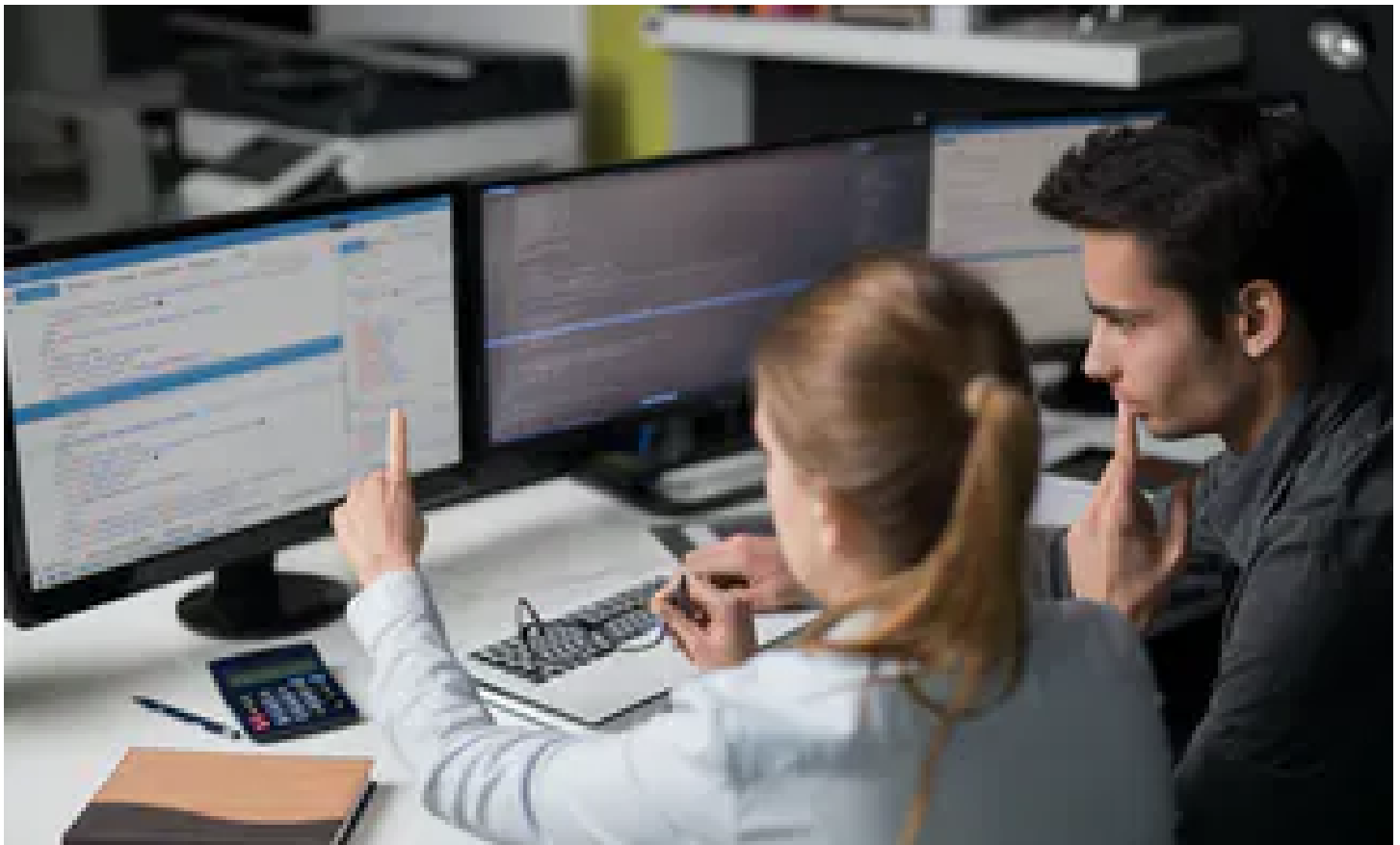
Programmers need ethics when designing the technologies that influence people's lives

Quantifying the Holocaust: Measuring murder rates during the Nazi genocide

Face API

Face API rated the emotions on facial expressions of basketball players out of 100. White faces were seen, on average, as happier than black faces.

	White	Black
Neutral	32.200	37.300
Contempt	0.300	1.000
Sadness	0.200	0.400
Surprise	0.000	0.100
Fear	0.000	0.000
Disgust	0.000	0.000
Anger	0.100	0.200
Smile	61.100	67.200
Happy	61.100	67.200

| 0.000 | 25.000 | 50.000 | 75.000 | 100.000 |
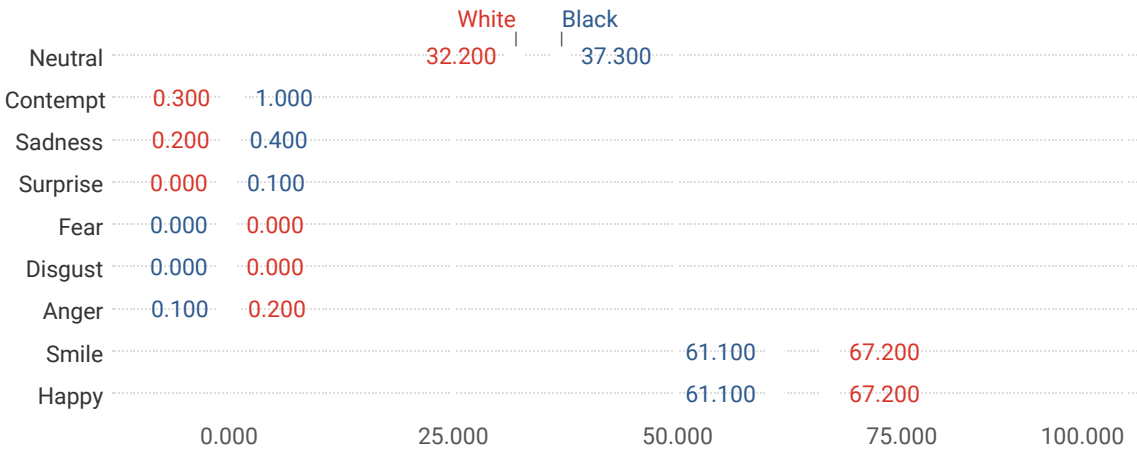
Chart: The Conversation, CC-BY-ND • Source: SSRN (2018) • Get the data

Stereotyped by AI

My study shows that facial recognition programs exhibit two distinct types of bias.

First, black faces were consistently scored as angrier than white faces for every smile. Face++ showed this type of bias. Second, black faces were always scored as angrier if there was any ambiguity about their facial expression. Face API displayed this type of disparity. Even if black faces are partially smiling, my analysis showed that the systems assumed more negative emotions as compared to their white counterparts with similar expressions. The average emotional scores were much closer across races, but there were still noticeable differences for black and white faces.

This observation aligns with other research, which suggests that black professionals must amplify positive emotions to receive parity in their workplace performance evaluations. Studies show that people perceive black men as more physically threatening than white men, even when they are the same size.

Some researchers argue that facial recognition technology is more objective than humans. But my study suggests that facial recognition reflects the same biases that people have. Black men's facial expressions are scored with emotions associated with threatening behaviors more often than white men, even when they are smiling. There is good reason to believe that the use of facial recognition could formalize preexisting stereotypes into algorithms, automatically embedding them into everyday life.

Until facial recognition assesses black and white faces similarly, black people may need to exaggerate their positive facial expressions – essentially smile more – to reduce ambiguity and potentially negative interpretations by the technology.

Although innovative, artificial intelligence can perpetrate and exacerbate existing power dynamics, leading to disparate impact across racial/ethnic groups. Some societal accountability is necessary to

Temporary Remote Course Instruction effective Wednesday, Sept. 23

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Proctorio - Privacy Information

⊘ *Last Updated: 09/17/2020*

Overview

Instructors use online exam proctoring tools like Proctorio when giving exams to help ensure academic integrity. Proctorio uses an authentication process to verify the student's identity, then captures audio, motion, and systemic changes to identify suspicious behaviors. At the conclusion of the exam, time-stamped comments, screenshots of potential violations, as well as video and audio recordings of the student taking the exam, are available on the instructor's dashboard. CU Boulder currently uses Proctorio's automated level of proctoring. Information related to what data is collected, accessed, and stored at this level is detailed below.

Automated Proctoring

The default service provided by OIT to the campus is Proctorio's automated proctoring service. When a student's exam begins, they will be auto-authenticated. Proctorio automatically analyzes and captures images of test-takers and their IDs, then displays both in the Proctorio Gradebook and flags any anomalies for review. While the student takes the exam, the Proctorio integration with Canvas records audio and motion in the testing environment.

Depending on the rules of the exam, set by the instructor, Proctorio may also check for any disallowed activity, such as accessing certain websites or peripherals (such as a second monitor). Proctorio can further prevent functions like copy/paste, as well as any software that could mirror, record or otherwise track the exam. Proctorio uses AI to flag potential suspicious activity.

Proctorio operates within the Chrome browser and requires a browser extension to download. It

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can be removed after testing. It is not active before the exam is accessed, nor after the exam is complete.

Upon completion of the exam, if Proctorio has flagged any suspicious behavior, it provides timestamps and screenshots of those behaviors to the instructor.

Frequently Asked Questions

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▼ What data does Proctorio collect?

At the automated level of proctoring, Proctorio collects your first name, last name, CU Boulder email address, phone number, and a photo of your Buff One Card or government issued photo ID.

During the exam, Proctorio uses the camera and microphone on your device to record the environment you are testing in. Proctorio also requires you to share your screen so that it can record the activity on your computer while you take the exam.

▼ What data does Proctorio access?

At the automated level of proctoring, Proctorio uses the camera and microphone on your device to record the environment you are testing in. Proctorio also requires you to share your screen so that it can record the activity on your computer while you take the exam. At your instructor's request, Proctorio might require you to use your computer's camera to make a 360 degree scan of your testing environment.

▼ Who has access to the information collected by Proctorio?

At the automated level of proctoring, in addition to Proctorio, your instructor, Teaching Assistant, and OIT have access to the information collected.

▼ Does Proctorio sell the information it collects?

No. The information that Proctorio collects is owned by the University of Colorado Boulder.

▼ How is the information captured by Proctorio used?

Proctorio uses your first name, last name, CU Boulder email address, phone number, and a photo of your government-issued photo ID or Buff One Card to verify your identity before you take an exam.

After an exam, Proctorio shares recordings it captured with your instructor. Your instructor may review this information to determine if any cheating has occurred.

Proctorio's proctors are rigorously screened before hire and well-trained in best practices related to proctoring, privacy, data security, and customer service. Proctorio also employs firewalls and encryption to protect student data, audio and video. Student data is never sold or rented to third parties. Proctorio is FERPA- and COPPA-compliant, and California Student Privacy Certified.

For more information, please review Proctorio's privacy policy or contact the IT Service Center at oithelp@colorado.edu or (303) 735-4357.

▼ Does Proctorio use facial recognition software?

Proctorio uses facial detection software, rather than facial recognition software. Facial detection software is used to detect the presence of a face. Facial recognition or identification software is used to detect the presence of a particular person's face. Proctorio's software is used to determine if the camera is working and that only one person is present. Next, Proctorio attempts to determine whether a student looks away from the exam for too long, detect if the student leaves the testing environment, and determine if a secondary face is present within the testing environment. Proctorio does not collect or store any biometric information.

(Citation: Inside Higher Ed, 4/30/2020, "University of Venus, Response from Proctorio")

▼ Is Proctorio's facial detection software discriminatory?

There is some evidence that algorithm-based facial detection software is biased towards white, male users. However, Proctorio does not use their software to track the identity of the

user; in fact, Proctorio does not collect any biometric information. The facial detection software is used only to confirm that the camera is working properly and to record the test-taker's movements during the proctored exam. If Proctorio cannot identify your face during the verification process, you will not be permitted to take the exam. If this happens to you, please contact your instructor to request alternate arrangements for taking your exam.

▼ **What happens to the recordings after an exam? Are they retained for a certain period of time?**

Recordings are stored for one year (366 days) after the last attempt.

Feedback
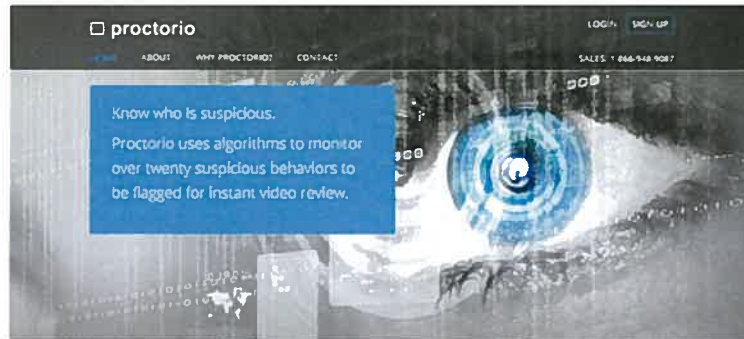
This anti-cheating app brings Big Brother to a campus near you

By. Jackson Cantrell / September 23, 2015 / No Comments

It's no secret we're being watched. In the virtual world, websites keep millions of terabytes of personal click and page-visit history. On the street, you can find ATMs and supermarket cameras quietly videotaping passersby. An estimated one trillion photos will be taken this year, many not even by humans, and there's a good chance you'll pop up in thousands of them. Even if you're relaxing on top of a 200 foot tall wind turbine, privacy can be compromised.

Nobody is safe.

Polls

Which "Stranger Things" character are you?

○ Mike

○ Dustin

○ Lucas

○ Eleven

○ Jonathan

○ Nancy

○ Steve

○ Hopper

○ Joyce

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None of this really phased me. So what if I appear as some random dude in the background of thousands of photos this year? I have nothing to hide. Hell, I even kind of like my personal shopping suggestions on Amazon. This was until I registered for NEUR1030: Neural Systems.

My change of heart had nothing to do with the class itself. The transformation from happy nonchalance to paranoia occurred in the computer lab, where we were asked to take a pre-test on our personal computers.

The first direction was to download an anti-cheating Chrome extension called "Proctorio."

It would be hard to design a more ominous logo.

The following dialogue opened up asking for permissions:

It can:

- Read and change all your data on the websites you visit
- Read data you copy and paste
- Capture content of your screen
- Manage your downloads
- Detect your physical location
- Manage your apps, extensions, and themes
- Read your browsing history

The fun doesn't stop there.

The following information will be collected during the duration of the exam:

- Your microphone
- Your webcam
- Your physical location
- Your identity
- Your clipboard
- Your mouse location
- Your browser size
- Your browser tabs and windows
- Your head movements
- Your eye movements
- Your mouth movements
- Your entire screen
- Any website you visit
- Any other applications running
- Number of display screens connected

I've enabled apps to use my webcam and microphone before, but never to remotely access my computer, record browsing history, and collect my head, mouth, and eye movements. But since I needed to take the pre-test to take the class, I had no choice other but to accept.

My concerns aside, I continued onto the next couple of steps. The test wasn't for a grade, so I wanted to get through it as fast as I could. All was going smoothly until my microphone wouldn't connect.

I opened "System Preferences" and fiddled with my settings but nothing seemed to work. Just as I was raising my hand to ask the computer lab assistant for help, a chat window popped up on my screen.

Enter "Jon L," the 24/7 Proctorio Support specialist.

I unfortunately wasn't able to screenshot this part of the chat, but I received a message saying something along the lines of this.

Jon L: "Hey it looks like you're having trouble with your microphone. Do you mind if I help?"

I hadn't requested remote help or even pushed a button. Jon L. just appeared. He simply knew I was having trouble with my microphone.

I replied. "Yeah."

Jon L: Ok is it alright if I help you? :)

The smiley face caught me off guard. What kind of tech support communicates in text faces?

Again I hesitantly replied "Yeah."

To which he said:

Jon L: I will be here when you get back

All of a sudden the screen blinked black, then applications started closing and windows popped up and disappeared. My computer shut off.

And it turned back on, re-opened the webpage and reopened the chat box:

> Jon L: Looks like you are good to go! :)
> Jon L: I will be here if you need anything
> Jon L: good luck on your exam :)
> Jon L: Looks like you got it! Feel free to close this
>   chat box now :)

Note the consecutive smiley faces.

I was confused. I immediately called over a lab assistant and told him what had happened. My first reaction was, *How the hell is this okay?*

Upset, I typed:

→ How can I trust you Jon L?

Jon L is typing...

→ How can I trust you Jon L?
Jon L: I helped you so far, haven't I? haha

The first thing I did after I finished the exam was delete Proctorio from my browser. Even if you are not using the service, Proctorio retains a record of the user's previous permissions to access to your screen, camera, browsing history and much more during the testing period. Despite this, the Neuroscience department did not provide instructions nor recommendations on how to delete or disable the Chrome extension.

After a quick look at the website, I felt a tad reassured. The home page explains that Proctorio does not collect personal information about users, and that it encrypts and protects all data it records.

Searching for more information, I called Proctorio to schedule an interview, and I was put in contact with Jon Lacivita, a customer advocate at Proctorio.

I'll say that again. Jon Lacivita. Jon L.

Does this company have only one employee?

Jon graciously answered all my probing questions about tracking students and stealing data. It turns out that Proctorio is completely compliant with the Student Privacy Pledge, a third party organization that evaluates companies to make sure they're keeping up with the latest privacy standards.

I also learned that Proctorio collects anonymized data during the test, and that the instructor is the only entity who can connect the data to personal information, such as name and student I.D. number.

"When it comes to chat and remote access, we don't get any information as far as their name or anything that is going to be personally identifiable. That information actually stays with the school," Lacivita said.

On one hand, Proctorio is taking a major step towards eliminating cheating and legitimizing online courses, which have the potential to provide low-cost education to millions worldwide. The service can also provide extremely useful information to professors on which tested areas individuals and the class needs to focus on in order to improve.

In my Neuro 1030 lecture, Professor Monica Linden said the service will save the department "considerable time and money."

However, it is important to note that we are coming off a year of the worst **corporate** and **government hacks** in history. It may be difficult to access Proctorio's database, but it's certainly not impossible.
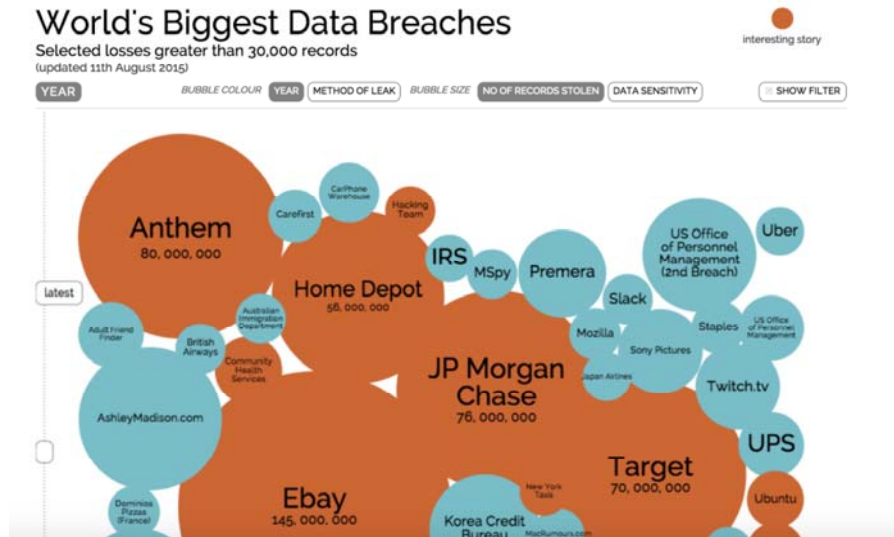
An infographic of the year's largest corporate hacks. Click on the image for more info.

To figure out how Proctorio fits into Brown's forever-expanding web of third-party computer-related sites and services, I emailed Dr. TJ Kalaitzidis, an Instructional Designer at Brown. He explained to me that Brown did not have a current contract with Proctorio.

"We have not made a decision to support it," he said. "Since this is a pilot, there is no contract and we are not maintaining any data."

Computers hold a goldmine of vulnerable personal information, especially as more aspects of day-to-day life are handled electronically. **Proctorio is committed to protecting the privacy of its users**, but a hack of its data and abilities is not out of the question and could be catastrophic.

As Brown decides whether to contract out Proctorio, or any program like it, we must weigh the protections against cheating and the saved time and money against possible intrusions of student privacy.

And at the end of the day, how hard is it to proctor a test in person?

Update Feb. 24, 2016: Users who downloaded the Proctorio Chrome extension in 2016 were presented with text stating that the extension can:

· Read and change all your data on the websites you visit
· Capture content of your screen
· Manage your downloads
· Manage your apps, extensions and themes

Update Aug. 27, 2018: This post has been clarified to reflect the stated capabilities of Proctorio's extension. Proctorio has stated that its extension cannot access a user's personal files, exercise complete control over a user's personal computer or remotely turn off a computer. The revised post also reflects that while Proctorio retains a record of permissions to perform certain actions while the service is not being used, the company has stated that the extension does not actually perform such actions when not in use. The revised post also clarifies that a list of actions the Proctorio Chrome extension said it could perform was accurate as of February 2016. Two images have

been removed from the post to better represent the stated capabilities of Proctorio's extension.

Images via Jackson Cantrell, graphic [via](#), video screenshot [via](#), other images via [Proctorio.com](#) and screenshots of the Brown Canvas Proctorio module.

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This is Exhibit L referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

_____

A Commissioner for taking Affidavits for
British Columbia

#**Transforming Teaching & Learning**

Online Exam Proctoring Catches Cheaters, Raises Concerns

Many administrators and faculty members say online exam proctoring works and is vital to expanding online programs. But some question, at what cost?

By Jean Dimeo   // May 10, 2017

Proctors observing online exam test takers.

As the number of online courses and degree programs greatly expanded during the past decade, so did the number of exams administered online. Tens of thousands of online exams now are taken each month by students enrolled in online courses -- 30,000 exams a month at Western Governors University alone -- as well as by a growing number of learners in face-to-face classes.

At the same time, the number of for-profit online exam proctoring services has ballooned as colleges and universities seek effective, cost-efficient ways of catching cheaters. Inside Digital Learning found at least 15 online proctoring companies, more than twice the number that were around just five years ago, industry officials say. Some institutions also have their own online exam proctoring teams to supplement the services they purchase.

The products offered by for-profit proctoring services are sophisticated and wide ranging, and their costs have dropped amid increased competition and technology enhancements. Some believe that exams proctored using artificial intelligence and biometric authentication with iris scans are not too far off.

Still, a number of faculty members and administrators continue to voice concerns -- some about the services' capabilities, some about students' privacy and some about both. "I think that [online proctor

services] do a better job than face-to-face proctoring," said Kathy Austin, assistant vice president for Information Technology at Texas Tech University. But she added: "The respect for students' rights and privacy outweighs any need to make sure all these technologies are deployed."

Enabling Online Advancement

Diane Horton, online proctor coordinator and online services manager for the University of North Carolina system, said proctoring services have enabled the UNC system to expand its online course offerings. "The mission of UNC schools is to make higher education available to more members our community," Horton said, noting that the average age of UNC students is rising and that older learners typically need more flexibility in terms of class schedules and exam times. "For me, this is very exciting."

UNC's 17 campuses have 30,000 to 40,000 exams proctored online annually. Like many institutions, UNC still proctors some online course exams face to face on campus or at testing centers.

There are a couple of reasons why the number of for-profit online proctoring exam services have greatly increased in recent years. Adel Lelo, senior manager of assessment solutions at Western Governors University, said colleges and universities are much more aware of the services, and in general, are more accepting that the companies can provide reliable, secure results.

"It's a proven concept, and more institutions are jumping on board," Lelo said. "There are more of [the services], which is a good thing."

WGU, which was established 20 years ago to deliver online-only competency-based programs, has 30,000 exams proctored online each month, which Lelo said makes it the nation's largest consumer of online proctored exams.

The Nuts and Bolts

There are several categories of proctor services, listed below from lowest to highest in price. Online exams are taken at a computer that has an internal or external camera.

Auto authentication. Before the exam starts, the student takes a photo of her ID and face, answers a few challenge questions and enters a biometric keystroke signature (typically the student's first and last name).

Live authentication. After the student performs ID verifications, answers challenge questions and enters a keystroke signature, a live proctor does a facial comparison.

Automatic proctoring. After the student is authenticated, the test taker and her environment are monitored for sounds, motions and systemic changes.

Record-and-review proctoring. After completing authentication, the person is videotaped from the start to finish of the exam. A proctor later reviews the video.

Live proctoring. After completing authentication, the student and her surroundings are monitored by a live proctor, who can trouble shoot potential testing infractions as they occur.

For exams viewed by proctors, students typically have to schedule exam times hours or days in advance. For exams that don't require a human, exams usually can be taken at any time. "Even at 3 a.m.," Lelo said.

Online exam fees range from $7 to $15 for automated authenticated proctoring to $10 to $25 for an exam proctored in-real time by a person. Colleges and universities that have tens of thousands of exams proctored annually typically pay lower fees. (Officials at the institutions interviewed for this article would not reveal their actual costs.)

Institutions either charge students a fee for each online test they take, or they raise all online students' technology or general fees to cover total online exam costs.

Proctoring services are testing mobile options, but mainly to authenticate the exam takers. "The [learning management systems] are not ready yet for taking tests on the phone," said Michael London, president and CEO of Examity, an online proctoring service that has 175 college and university clients.

Mike Olsen, co-founder of Proctorio, said his company supports exam taking on tablets, but not phones because it is difficult to get a clear view of the test taker. Proctorio has about 400 higher ed and K-12 clients.

Plus, said Jennifer Lerner, associate vice president for e-Learning at Northern Virginia Community College (NOVA): "I don't think students want to take an exam on a little phone."

Reduces Cheating, Boosts Convenience

Company officials and college administrators interviewed for this article said that online-proctored exams, especially those that are videotaped or monitored during the test, deter cheating because cheaters get caught. "Students know they are being monitored," said Douglas Winneg, senior vice president of Software Secure/PSI, which works with 400 higher ed institutions worldwide. "Students who cheat on an online exam won't cheat again."

"Proctoring an exam online is easier than proctoring a paper-based face-to-face exam," said Kevin Nathanson, UNC's online proctor manager, adding that it's harder to catch students cheating on face-to-face exams because there usually only is one instructor in a room with many test takers.

In addition to effectiveness, online exam proctoring offers convenience for students. For example,

NOVA has campuses in the Washington, D.C., suburbs that are plagued by traffic. "Students are happy," Lerner said. "The only thing needed is a good Internet connection."

NOVA, which boasts 23,000 students taking online courses, has about 12,000 exams proctored online each month.

WGU contracts with 2,000 testing centers nationwide, but 90 percent of its 80,000 students take all tests online with a live proctor. "Our students are working professionals, so if the testing centers are only available 9 to 5 Monday through Friday, then that doesn't help for them," Lelo said.

WGU has spent years improving online exam monitoring. It provides each new student with an external webcam, which must be placed at a 45-degree angle to the person when he takes an exam. Lelo said the external web camera gives the proctor a much better view of the test taker's head movements and the testing environment than an internal one does. (For more information about WGU's efforts, click here.)

Proctors intervened in 3 to 5 percent of WGU online exams, but often that's because a person, usually a child, entered the room, or the test taker leaned back in his chair, Lelo said.

Surprising Student Reaction

Proctored exams online aren't without issues. Texas Tech has been reviewing online proctoring services for about three years, and recently completed pilots with two firms. One thing the institution wasn't expecting was negative reactions from some students.

"A lot of the comments we received were about being intrusive in their lives, that someone was watching them the whole time they were being proctored," said Justin Louder, associate vice provost, Worldwide eLearning at Texas Tech, noting students often take exams in their dorm or bedrooms. "They thought it was big brother invading their computers."

Some Texas Tech test takers were asked by live proctors to remove pictures from their surroundings and some minority students were told to shine more light on themselves.

"I don't think the vendor intended to be discriminatory," Texas Tech's Austin said, declining to name the proctor service. Nevertheless, the university stopped the pilot with that firm.

Louder wondered how long the proctoring companies keep videos of students taking exams and where they are housed. "If they are in the cloud, who has access to those recordings?" said the UNC assistant professor of education.

Proctoring services say exam videos and other data are securely stored. Examity, for instance, stores videos in a certified data center server, and then archives them after a defined period of time in line with Family Educational Rights and Privacy Act (FERPA) guidelines and industry best

practices, London said.

Software Secure/PSI's Winneg said the storage period is determined by each institution. Video and audio recordings, as well as encrypted images of IDs, are stored in the Amazon S3 servers, and metadata about exams is separated and stored in a secure hosting facility, he added.

Mollie McGill, director of programs and membership for WICHE Cooperative for Educational Technologies (WCET), said some proctoring companies tell institutions that accreditors require proctoring services for online exams, which is not true. And McGill, along with faculty and administrators interviewed, said there are no standards for online test proctoring -- and that institutions need to develop them.

There are other issues as well. "I had students who had difficulties installing the software," said Oskar Harmon, associate professor of economics at the University of Connecticut who has been teaching online courses since 2004. "I also had a student who was doing an exam at a public library and his connection was dropped."

Finally, some academics are critical of administering any exams online. Jill Leafstedt, executive director for teaching and learning innovations at California State University, Channel Islands, said many online exams only show that the test takers could memorize facts.

"Our exams require thought and application of knowledge," said Leafstedt, who also is the university's senior academic technology officer. "We want to know that they learned, not what they can regurgitate."

CSU Channel Islands has 6,000 full-time students. Five to 7 percent of the university's courses are offered online, but all exams are proctored face to face, Leafstedt said.

More Students, More Exams

Going forward, company and colleges officials interviewed by   Inside Digital Learning said the number of exams proctored online will continue to swell because of the steady growth in online courses and learners. "Adults are becoming the new normal student and need the ability to balance school and work," London said.

In the near term, competition and new technologies will continue to force exam prices down. But over time, big proctoring companies will acquire smaller firms or will go out of business. "The winners will be the ones that provide the most services," Winneg said. "It's all about personal touch and faculty freedom."

Jarrod Moran, founder of ProctorU, which has about 850 higher ed clients, said the industry still is

young and "has a long way to go. We always have to have technologies that are better than the older technologies."

Still, the need for face-to-face exams will never go away because learners need choices and because some subjects don't lend themselves to online tests. For example, Lerner said NOVA conducts in-person exams for Arabic language classes and some math courses.

"There is no such thing as a perfect testing method, including at testing locations," Lelo said. "All we can do is to make it more difficult to cheat, while making testing as accessible as possible."

Read more by *Jean Dimeo*

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The Washington Post

Democracy Dies in Darkness

Mass school closures in the wake of the coronavirus are driving a new wave of student surveillance

Colleges are racing to sign deals with 'online proctor' companies that watch students through their webcams while they take exams. Education advocates say the surveillance software forces students to choose between privacy and their grades.

By **Drew Harwell**

April 1, 2020 at 7:00 a.m. PDT

When University of Florida sophomore Cheyenne Keating felt a rush of nausea a few weeks ago during her at-home statistics exam, she looked into her webcam and asked the stranger on the other side: Is it okay to throw up at my desk?

He said yes. So halfway through the two-hour test, during which her every movement was scrutinized for cheating and no bathroom breaks were permitted, she vomited into a wicker basket, dabbed the mess with a blanket and got right back to work. The stranger saw everything. When the test was finished, he said she was free to log off. Only then could she clean herself up.

"Online proctor" services like these have already policed millions of American college exams, tapping into students' cameras, microphones and computer screens when they take their tests at home. Now these companies are enjoying a rush of new business as the coronavirus pandemic closes thousands of American schools, and executives are racing to capture new clients during what some are calling a once-in-a-lifetime opportunity.

The live proctors these companies hire ensure test-takers abide by a strict set of rules. They watch the students' faces, listen to them talk and can demand they aim their cameras around the room to prove their honesty. Some companies also use facial-recognition, eye-tracking and other software that purports to detect cheating and rates the students' "academic integrity."

Looking off-screen for too long, for instance, can raise a test-taker's "suspicion" score, potentially leading them to fail the exam. The companies sign contracts with the schools, which cover some of the cost, though many charge students, too: One company, ProctorU, charges students about $15 per test, while another, Proctorio, offers a $100 "lifetime fee."

"It's insanity. I shouldn't be happy. I know a lot of people aren't doing so well right now, but for us — I can't even explain it," Proctorio's chief executive Mike Olsen said in an interview. "We'll probably increase our value by four to five X just this year."

The explosive growth casts light on what could be a pivotal moment for mass surveillance in the United States as privacy concerns clash with the unprecedented realities of a modern pandemic. Hundreds of thousands of students have been sent home from universities, and millions of high school students have seen their local schools closed for the

rest of the year.

With more schools pushing to track students' locations across campus and their testing behaviors at home, education advocates worry the systems are invading students' personal lives and reducing the practice of learning to a forensic investigation, where students are presumed cheaters until proven upright.

"To take a test you need to let a stranger have a video recording of your room? Are you kidding me?" said Bill Fitzgerald, a researcher at the nonprofit group Consumer Reports who specializes in education technology.

"These platforms exist because they are selling a narrative that students can't be trusted," he said. "The people who have the most to lose here are the students, and they're the farthest away from the decision. ... Students are paying tens of thousands of dollars to have their higher-ed institutions sell them out."

Students bothered by the system's intrusive eye previously were given the option of taking their exams the old-fashioned way, in a classroom or a testing center. But with campuses shut down, students' participation has become effectively mandatory — just before their final exams.

The systems have already unnerved students like Neil Buettner, a 28-year-old Marine Corps veteran and student at Harford Community College in Churchville, Md., who was incensed by the demands made by the online proctor service Honorlock before taking his microeconomics exam.

"It's talking about how it wants to access my computer, my microphone, the webcam. Monitor what's in the room around me, scan my room. It wants to scan my ID!" he said in an interview. When his professor said he had no option to take the test in person, he opted instead to drop the class. "It's just a huge step backward," Buettner said. "Everyone's giving up their freedom just for the virus."

Those concerns have not dented the appeal of companies like Proctorio, which staffs four sales offices in the United States and Europe and oversaw more than 1.2 million students during the December peak. Olsen said he expects their business could more than triple by the school year's end.

The company, which typically adds 100 new universities as clients in a single year, is now fielding about 120 leads a day. Big universities that would normally churn through a months-long negotiation now want to rush deals through in a matter of days. And reluctant administrators and professors, he said, are suddenly finding "they're being forced" to try it out.

The coronavirus lockdowns have also forced some companies to allow their proctors to work remotely instead of in a supervised office — raising alarms among privacy advocates over who's gaining access to students' bedroom video streams. One company, Examity, whose proctor centers in India were recently closed, has posted job listings for full-time contractors who would start watching test-takers as early as this month.

The software's invasive demands on students have also sparked fury among some professors. A faculty group at the University of California at Santa Barbara wrote a letter to campus leaders last month that argued that the adoption of ProctorU could turn the university into "a surveillance tool."

"We recognize ... there are trade-offs and unfortunate aspects of the migration online that we must accept," they wrote. "This is not one of them. We are not willing to sacrifice the privacy and digital rights of our students for the expediency

of a take-home final exam." (A ProctorU attorney responded with a letter threatening legal action over the group's "defamatory correspondence.")

ProctorU's chief executive, Scott McFarland, said the skeptics are outnumbered by newly interested school leaders: On a single day last month, his office fielded nearly 1,000 calls from educators asking about the service. The company, he said, has worked largely with colleges and private high schools, but the pandemic has opened the possibility of expanding into grade school exams.

"It was a slow wave, but this changes everything and makes it more like a tsunami event," he added. "There's just so much opportunity in places we haven't really chased before."

***

At the start of a ProctorU test, students are told to show the proctor their student ID cards, their rooms and the tops of their desks to prove they don't have any cheating material at hand. During the test, the proctor listens through the student's microphone to ensure he or she does not ask for help from someone out of view.

The proctor gains access to the test-takers' computer screens and receives alerts if they do something unacceptable, like copying and pasting text or opening a new browser tab. A video system analyzes the students' eyes: If they look off-screen for four straight seconds more than two times in a single minute, the motion will be flagged as a suspect event — a hint that they could be referencing notes posted off-screen.

To ensure the right student is taking the exam, the software uses facial-recognition software to match them to the image on their ID. Random scans are performed throughout the exam to prevent another test-taker from jumping in.

The company also verifies identities with a typing test: A student may be asked to type 140 words at the beginning of the semester, then again just before testing to verify the speed and rhythms of the student's keystrokes. Any discrepancies can be flagged for closer inspection.

A human proctor watches every second of an exam, though the student cannot see the proctor's face. In previous versions of the software, the student could see the person watching them, but "the creepiness factor always sort of came up," McFarland said. If a proctor suspects cheating, they alert a more aggressive specialist, known as an "interventionist," who can demand that the student aim his or her webcam at a suspicious area or face academic penalty.

Proctors typically work out of one of 11 centers across Alabama, California, India, Jamaica, Panama and the Philippines. But with many of those offices closed, the company said, it is opening backup centers in Canada, hiring more than 100 new workers and instructing many proctors to work from home.

ProctorU, which oversaw 2 million tests last year from more than 750,000 students, has compiled years of data on students' 15 "behavioral cheating types," McFarland said. Students' tests are live-streamed and recorded for later review: The worst offenders, McFarland said, have had their videos edited together into what he called a cheating "Hall of Fame."

ProctorU's competitors offer similar anti-cheating surveillance with different strategies. Honorlock, a Florida-based company that CEO Michael Hemlepp said has seen "a massive spike in inquiries," uses software that looks for "attempted dishonesty" and then sends in a human proctor for further review.

Proctorio goes further, using a completely software-driven approach. After students consent to letting Proctorio

monitor their webcams, microphones, desktops or "any other means necessary to uphold integrity," the system tracks their speech and eye movements, how long they took to complete the test and how many times they clicked the mouse. It then gives professors an automated report ranking test-takers by "suspicion level" and the number of testing "abnormalities." Students deemed untrustworthy by the computer are color-coded in red and given an icon of two shadowy figures, reminiscent of the "Spy vs. Spy" cartoon of Mad magazine fame.

Chris Dayley, the director of academic testing services at Utah State University, which uses Proctorio, described the software with a laugh as "sort of like spyware that we just legitimize." And though many students despise the feeling of being watched, Olsen, the company's chief executive, said the discomfort is worth it if it helps protect the tests. "We're the police," he said.

***

In an age of social distancing, the companies are racing to show they have the solution to colleges' testing crisis. Their websites include coronavirus-related advertisements, introductory pricing offers and condensed contracts to, in Honorlock's words, "eliminate need for legal intervention and liability concerns."

Asim Ali, the executive director of the Biggio Center for the Enhancement of Teaching and Learning at Auburn University, said the school is preparing for a surprise onslaught later this month of more than 200,000 final exams to be overseen by Honorlock and ProctorU as the sprawling Alabama campus empties out for the rest of the spring semester. The systems will cover virtually every test taken by the university's more than 23,000 undergraduates, whether they had previously consented to the technology or not.

"It is a crisis situation," Ali said. "Desperate times call for desperate measures."

But some professors and privacy advocates worry the frenzy is leading colleges to approve big corporate data grabs that could leave their students exposed.

"Students are asked to agree to these decisions, but they have no meaningful power not to consent," said Guy McHendry, an associate professor at Creighton University, which has used Examity for some proctored exams. "And because we're doing this with such urgency, we don't really have time to ingest all the implications of what these companies will do."

The companies retain rights to much of what they gather from students' computers and bedrooms. ProctorU's privacy policy for test-takers in California shows the company shares reams of sensitive student data with proctors and schools: their home addresses; details about their work, parental and citizenship status; medical records, including their weight, health conditions and physical or mental disabilities; and biometric data, including fingerprints, facial images, voice recordings and "iris or retina scans."

The company said it shares test-takers' browsing history, searches and online interactions with a group of website analytics providers, which it does not name. The company also said it retains the right to share all video and audio recordings of the students with their schools to ensure "no exam protocols were violated." Student data is retained "for as long as necessary," the policy states. (McFarland, the company's chief executive, said it does not sell any information to third parties.)

Education advocates say they are concerned about how the companies and schools will use this increasingly intimate view of students' private lives. They also question whether the systems will unfairly penalize students for things that are out of their control: technical glitches, nervous tics or other housemates walking into view. "All of this

surveillance," said Audrey Watters, a writer for the blog Hack Education, "is just not ideal for this very human practice of teaching and learning."

On message boards, students claim to have been flagged for stretching to grab a pen or letting their eyes wander during a long exam. One student said on Reddit that their professor had accused them of cheating during an Honorlock-proctored exam because they had been looking off-screen while working out a math problem by hand.

On TikTok, students have posted videos about being relentlessly watched by proctors, "having a mental breakdown" during an exam, and crying as the test timer ticks down. Others have shared ways to cheat ("the hat," "the yawn") and joked about being caught dancing provocatively on camera.

The mass move to an experimental testing system has left some administrators concerned about what happens next. David Cillay, the vice president for academic outreach at Washington State University, where final exams are scheduled for early May, said he worries about students in rural corners of the state where Internet connections are spotty. "We're moving into this environment, in the middle of the semester, when we haven't prepared students to understand all of the technology," he said.

But many college leaders say there's no time for hesitation. Mihran Aroian, a professor at the University of Texas at Austin, said he expects that hundreds of new students will be taking tests for his Foundations of Organizational Behavior and Management class in coming weeks through ProctorU, and that he has no backup plan for students who are uncomfortable with the company's demands.

The virus, he said, could mark a "tipping point" for American education. "We can't assume everything is going to be normal after the end of this," he added. "It's a whole new world."

Updated September 26, 2020

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#**Blogs**

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GenX Women in Higher Ed, Writing from Across the Globe

Unfeeling AI and Assessment

> As we approach the end of the semester in our new and unexpected distance delivery mode, the question of assessment is, if it wasn't already, moving to the forefront of our and our students' minds.

By Lee Skallerup Bessette

// April 8, 2020

As we approach the end of the semester in our new and unexpected distance delivery mode, the question of assessment is, if it wasn't already, moving to the forefront of our and our students' minds. Even with flexible grading policies, assessments and grading remain fraught territory, with new modalities and formats to contend with. We've seen a move toward AI-powered proctoring software to ensure "academic integrity." We've already read in this space the thoughts of Thomas

J. Tobin on this issue, but we also need to think carefully about AI-powered proctoring.

As we try out new tools, it's important to examine them critically for any potential limitations or issues. In his recent essay "Our Bodies Encoded: Algorithmic Test Proctoring in Higher Education," librarian and senior instructor Shea Swauger outlines some of the potential unintended consequences of using AI-powered proctoring solutions. It is an important read because it lays out ways in which tools like Proctorio can amplify racial and ableist discrimination, as well as signal to students that their course is not as inclusive a space as was perhaps initially indicated.

The examples laid out by Swauger highlight the ways in which a software like Proctorio does not take physical or mental disabilities into consideration, as the AI is trained on "normal" or ableist norms of behavior. Students who need to stand or move frequently, or who are unable to control their movements, will be flagged by the software, and while there are allowances that can be made, it is now up to the students to advocate for themselves for the proper accommodations, rather than the environment being a welcoming space for them.

As someone with ADHD, until reading this essay, I had not realized that much of my fidgeting and inability to sit still would be flagged by the software. I do not typically disclose my ADHD, and this behavior in a traditional class setting would be probably overlooked. However, I cannot help but think the added layer of scrutiny on my movements during an online test would cause me undue stress, focusing my attention on keeping still and not appear to be cheating, rather than on the test itself.

Swauger also highlights how "normal" is also coded as "white," with the AI in many instances unable to "see" black faces and bodies. Our students risk being literally erased by AI, with stories of students having to put themselves under bright lights in order to be recognized by the AI, creating less than ideal testing conditions for the students. Again, the students' attention becomes focused on elements that have little to do with their ability to show content mastery, but instead communicates to them that they are occupying space not meant for them.

If you do use or are thinking of using an AI-powered online proctoring solution, I encourage you to read Swauger's essay in order to best mitigate the very real, albeit unintended, potential negative consequences, to help all of your students be as successful as possible in their assessment activities.

Read more by Lee Skallerup Bessette

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#**Blogs**

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GenX Women in Higher Ed, Writing from Across the Globe

Response From Proctorio

The company responds to a recent blog post.

By The Proctorio Team

// April 30, 2020

Note from the editors: While we don't publish pieces written by corporations, Proctorio requested the ability to respond to Lee Skallerup-Bessette's blog post from earlier this month and we agreed as we originally published Lee's post at UVenus. We do not endorse Proctorio.

Recently, Dr. Lee Skallerup-Bessette published a blog post at University of Venus on the expansion of online remote proctoring solutions in the wake of COVID-19 and the potential negative impacts these

solutions may have on students' privacy. We acknowledge and respect the expressed concerns, which is why we designed our software with industry leading safeguards to protect student privacy.

In her blog post, Bessette references the opinion piece, "Our Bodies Encoded: Algorithmic Test Proctoring in Higher Ed" on remote proctoring solutions. However, we believe that there are several issues with the source article that have already been addressed, separately, with the author, Shea Swauger.

In his piece, Swauger states that all remote proctoring software utilize facial recognition technology. However, Proctorio utilizes facial detection technology. Facial recognition is a biometric measurement and collection of an individual's unique facial geometry. Unlike some of our competitors, Proctorio does not collect biometric information. Biometric information can include facial recognition, keystroke fingerprinting, or voice recognition. Proctorio's facial detection notifies the instructor if a student looks away from the exam for too long, to detect if the student leaves the testing environment, or if a secondary face is present within the testing environment.

There have also been a number of misconceptions, not only on what kind of technology we use, but on how Proctorio is used by instructors and institutions. Instructors have the ability to create separate exams and enable different Proctorio settings to accommodate students with disabilities, difficult home environments, or those who experience exam anxiety. The Proctorio software does not dictate what is considered "normal behavior". The instructor is then able to review the exam attempt by the student and make the final decision on whether or not the behavior actually infringes their exam's integrity.

It is important to note that Proctorio is committed to conforming to WCAG 2.1 AA standards of the World Wide Web Consortium (W3C), Section 508 of the Rehabilitation Act, and EN 301 549 Accessibility requirements in Europe. Our VPAT is publicly available and can be accessed here.

Skallerup-Bessette also references fidgeting in her blog post. We want to stress that within Proctorio, "fidgeting" is not considered a behavioral flag. Proctorio is designed to identify behavior within an exam environment; we leave the exam settings and decisions regarding academic integrity to the instructor. Instructors would be able to identify the difference between a student fidgeting and a student looking through notes on their lap, communicating with another person in the room or using another device, just as they would within a classroom setting. An excellent example of this exists at a health professions school within the same university that employs Swauger, that has used Proctorio for over 5 years. Based on their assessment of flagged students, there is no evidence that students with any accommodation or disability are flagged at a higher rate than other students taking the same exam.

Most of the previous points lead to an important distinction, which lies in the relationship between Proctorio, test-taker data, and the partner institution. The institution plays the role of the data controller. The instructor and the institution enable the settings on each assessment and review the results. Proctorio makes no determination regarding student behavior, nor do we have access to or control over the exam information.

It may be important to note that there is a potential threat to society when students are not expected to meet integrity standards set forth by their institution. The healthcare setting is a prime example of this. When a healthcare provider is not held to the highest standards of academic integrity, people's lives are at risk. By protecting academic integrity, institutions can rest assured that the value of their degrees, and future patients, are protected.

We would like to avoid the spread of false information about Proctorio and thank the University of Venus for the opportunity to respond. We believe that the misinformation within previously published articles may lead to misconceptions about our product, damage our reputation and invoke anxiety or concern in students, instructors, and educational institutions who are current customers or may be considering adopting a remote proctoring solution.

We believe that Proctorio should be differentiated from its competitors as it takes a proactive approach to protecting student privacy and we would like that made clear to all students, instructors and institutions around the globe.

The Proctorio Team

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Qwertyuoip 123 • 5 months ago

This software is pointless and borderline unethical. If you (a teacher) are concerned about cheating, software like this does very little to stop it and is easily circumvented. Don't rely on it. Design your tests so students can't cheat - make them open-book and open-note. Keep the focus on comprehension - use tests with essay questions, opinion, or writing prompts.

The use of this kind of program is detrimental to students' performance, and is useless again cheating without draconian policies like randomly timed room sweeps and facial monitoring. They know you aren't going to look over hundreds of hours of test recordings. Don't use Proctorio or similar products.

hrhdhd • 5 months ago

Some of my colleagues have been fighting tooth and nail for an online proctoring service since we went all-online after Spring Break. When others suggest rethinking their exams, they refuse. So now we've signed

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Compassion over suspicion: UW should not use exam monitoring software

By Marium Raza

Apr 24, 2020

Jack Johnston

Editor's note: Here at The Daily, we encourage our readers to submit guest editorials and letters to be featured in our Free Speech Friday column. We welcome all voices to contribute positively to campus conversations. Our submission guidelines can be found here.

Four weeks into the quarter, it is midterm season — but in a drastically different setting. In lockdown due to the COVID-19 pandemic, I'm preparing to take my first online midterm exam. This time around though, there is an added aspect to my usual exam stress.

Classes across campus, including my own, have turned to exam monitoring software such as Proctorio to minimize cheating during exams. Proctorio uses facial detection software to verify and monitor students through their webcam for "suspicious" activity, including eye movements and background activity or noise.

It combines this with keystroke monitoring and artificial intelligence that learns to recognize cheating behavior. The software then generates an automated report for educators with a "suspicion level" for each student, and video recordings are stored on Proctorio's servers where it may be accessed by relevant UW staff.

Requiring students to install and use Proctorio exacerbates inaccessibility, invades students' privacy, and ultimately furthers ableist discrimination.

Proctorio is an extension on the Google Chrome web browser; however, not all students necessarily have access to devices that can access Google Chrome. One student in my course posted that their laptop crashes whenever they use Google Chrome. Another student, based out of China, was recommended that they use a VPN to download the software. This is particularly concerning, because a UW student in China was targeted and placed in a reeducation camp when she used a VPN for her homework in 2017.

Past inaccessibility, Proctorio is also a gross invasion of privacy. As a hijabi, Muslim woman of color I am extremely uncomfortable with software that films, records, and then uses artificial intelligence to analyze my face and body. Further, both UW and Proctorio have provided little to no information about where my data is actually going to be stored, and what might be at risk in the event of a data breach.

Most importantly, software like Proctorio increases systematic discrimination in education. Facial recognition technology is calibrated for white skin as the norm. Specifically with Proctorio, students at Texas Tech who have black or brown skin have been asked to shine more light on themselves to verify their identities. More broadly, facial recognition technologies have shown a consistent inability to identify people with darker skin, or even tell the difference between Chinese people.

This type of software also increases ableist discrimination. Proctorio analyzes student movement in comparison to everyone else's. If you're the only student to look at a clock, and no other student does, you are automatically flagged as "suspicious." For students with ADHD or other neuromuscular conditions the inability to sit still would be flagged.

Additionally, I can personally attest that the added layer of scrutiny causes me undue stress. I see myself focusing more of my attention on keeping still to not appear to be cheating, rather on the test itself. I can't even begin to imagine the effect this scrutiny would have on students who struggle with anxiety.

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I wasn't notified that my class would be using Proctorio until just a few days ago. If I had known previously, I might have even dropped the course. Tools like Proctorio ultimately amplify accessibility issues, privacy concerns, as well as racial and ableist discrimination. All of this erodes my trust as a student in UW.

Technology isn't inherently neutral or objective. It doesn't cause cheating, and it won't ultimately stop it. Since many exams including my own are open book, I strongly caution against the added layer of exam monitoring that Proctorio adds. In this already difficult, stressful time, the UW should not use anxiety provoking, ableist exam monitoring software.

I urge instructors at UW to instead prioritize compassion over suspicion, and to trust their students to demonstrate their learning with academic integrity.

Marium Raza

UW undergraduate, Biochemistry & Comparative History of Ideas 2021

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The New York Times | https://nyti.ms/2LcnKz7

Keeping Online Testing Honest? Or an Orwellian Overreach?

The rise of proctoring software to deter cheating alarms privacy advocates. Some students and professors find it invasive, too.

By Shawn Hubler

May 10, 2020

SACRAMENTO — As Daniel Farzannekou prepared to take an online exam late last month in his naval science elective at the University of California, Los Angeles, the software directed him to pick up his laptop and scan his room, his desk, his ID and his face.

"Ridiculous," Mr. Farzannekou, a 20-year-old history major, fumed. He grabbed a notepad from his girlfriend, scribbled a two-word profanity in black ink and pointedly held it up to the webcam. Then he uninstalled the digital proctor software and fired off an email to his professor. The monitoring system was like something out of "communist Russia," he wrote, demanding a less Orwellian test.

As a semester like no other winds down for college students, with bedrooms replacing classrooms as testing sites amid the coronavirus pandemic, professors accustomed to classrooms are no longer able to keep a close eye on test takers, looking for cheat sheets and wandering eyes.

Into the havoc have come digital proctoring services, which, after years in tech's niches, are suddenly monitoring hundreds of thousands of students taking millions of at-home exams from far-flung homes in myriad time zones.

Privacy advocates are sounding alarms. Investors are taking note. And students are fueling demand with their own testing — of boundaries.

Boston University and Georgia Tech started investigations last month amid reports that students were uploading questions from their take-home tests to an online tutoring service based in Santa Clara, Calif., and then copying the answers. Shares in the tutoring company, Chegg, spiked on Tuesday after it reported a 35 percent year-over-year revenue increase.

In an April survey by Educause, a nonprofit organization focused on technology and education, 77 percent of 312 institutions polled said they were administering, or planning to administer, take-home tests online with some sort of remote monitoring, ranging from human surveillance via webcams to software that lets a test temporarily take over a student's browser.

It is not only students who are cringing at the online monitoring.

"There has to be a better way," said Sue Escobar, a professor of criminal justice at California State University, Sacramento. Ms. Escobar said she would not use the webcam option the university added last month to its online testing software, finding it "invasive."

"Sure, we want to minimize cheating, but how far do you go?"

Academic integrity is not a new concern in remote learning. In surveys, about one in three students say they have cheated in online tests — about the same as the proportion who admit to cheating offline.

For nearly two decades, Respondus, an educational technology firm in Redmond, Wash., has been marketing a customized browser that prevents test-takers from seeking answers in a new tab while their exam is in progress. As online instruction and web access have expanded, the online proctoring market has become more crowded.

Companies like ProctorU in Birmingham, Ala., and Examity in Newton, Mass., now offer remote oversight by live proctors who watch students take tests via Skype and webcams. Proctorio in Scottsdale, Ariz., uses artificial intelligence to monitor and flag body language and background noise that might point to cheating.

"When you're educating thousands of students in an online setting, it's a good tool in the tool kit," said Louis Soares, chief learning and innovation officer at the American Council on Education, though he added that the best defense is a culture of academic integrity.

Mr. Soares noted that universities "were already on a journey toward a blending of face-to-face and digital learning." The research firm MarketsandMarkets estimated in 2018 that the online education market would grow from about $4 billion then to nearly $21 billion by 2023.

The pandemic has accelerated that trend to warp speed.

Proctorio's chief executive, Mike Olsen, said his steady business grew 900 percent after campuses began closing, as the 235,000 exams his company proctored last April grew this April to 2.5 million.

Scott McFarland, chief executive of ProctorU, said he has had to double his staff of about 500 live proctors. Respondus's founder, David Smetters, said the number of universities using its services went in the space of a few weeks from about 1,500 to about 2,500.

There will be no going back, university officials predict. "This is a learning curve we won't unlearn," Mr. Soares said. The College Board is considering digital, at-home SAT testing if schools do not reopen by fall.

With great growth have come great growing pains. ProctorU had a nasty — and public — exchange over data mining fears with a faculty group at the University of California, Santa Barbara. In Florida, thousands of students have signed Change.org petitions against their schools' use of Honorlock, a proctoring service that they say needs a more stringent privacy policy.

Social media has exploded with complaints and workarounds for cheaters. The University of California, Berkeley banned online exam proctoring, concerned that poor and rural students lacked sufficient access to high-speed connections and compatible laptops. Meggan Levitt, the assistant vice provost for technology at University of California, Davis, said the school was set to expand its live proctoring deal with Examity when the coronavirus shut down the company's India facilities.

Others simply report being annoyed and intimidated by the sense, even in the Zoom era, that they are being spied on. Thera Boonyamarn, a 20-year-old U.C.L.A. student who flew home to Thailand when her campus closed, said that every time she sneezed into a Kleenex because of allergies, the testing software would "flag" her for seeming to look away while holding what appeared to be paper.

"It's creepy," said Hailey Arzaga, a 22-year-old psychology and criminology major at Cal Poly Pomona who worried about what the webcam would reveal as she took a recent quiz on qualitative research methods. "Like, we have you on video and audio and we'll record you if you screw up."

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Mr. McFarland of ProctorU acknowledged that the live surveillance "is something to get used to." But the proctoring services say they do not sell students' data to third parties and that they purge it after it is sent to the school unless a cheating investigation requires that they preserve it.

ProctorU drafted and posted a Student Bill of Rights after the privacy concerns at the University of California, Santa Barbara. At the University of California's campuses where proctors are being used, faculty generally have assured students that alternate arrangements can be made for those concerned about proctors.

Still, the criticism has been unsettling, said Mr. Smetters, the Respondus founder.

"We don't drop in, we don't review the video after — people think we're doing that and we're not," he said. "We've been doing this for 20 years, we love education and suddenly we're the bad guys. But we're the good guys! We provide tools to universities so they can ensure integrity."

It was Respondus's testing system that unsettled Mr. Farzannekou, despite entreaties from his girlfriend, Emily Louie, and her roommate, he said, "that this was not the hill to die on."

"I told him, 'What's the big deal?'" recalled Ms. Louie, a 22-year-old biology major. "People our age — you just can't trust them. I know people who leave their phones open when they take online exams, and put Post-it notes on the computer screen so the camera can't see."

"I don't cheat," Mr. Farzannekou said, calling the software "dystopian" and "eerie."

Ms. Louie replied that she had taken a year of Italian, uneventfully, using the system.

"I was super self-conscious in the beginning, but then I got used to it."

But Mr. Farzannekou was not willing to let it rest.

"Isn't that the thing about authoritarian states — that they expect you to become used to it?" he retorted. His Iranian parents, her Chinese parents and her roommate, who is from Turkey, he pointed out, had come from "places where they don't respect your privacy."

In the end, his instructor relented. The dispensation was one time and came with a warning that, come finals week, the webcam might be back again.

"Please note that this exam is NOT open note or book," wrote the adjunct professor, Lt. Alexander Dellva, "and I am therefore relying on your integrity to take this exam using only the knowledge in your brain."

A version of this article appears in print on , Section A, Page 12 of the New York edition with the headline: Big Brother Is Watching Your Final Exams

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Proctoring Apps Subject Students to Unnecessary Surveillance

With COVID-19 forcing millions of teachers and students to rethink in-person schooling, this moment is ripe for an innovation in learning. Unfortunately, many schools have simply substituted surveillance technology for real transformation. The use of proctoring apps—privacy-invasive software products that "watch" students as they take tests or complete schoolwork, has skyrocketed. These apps make a seductive promise: that schools can still rely on high-stakes tests, where they have complete control of a student's environment, even during remote learning. But that promise comes with a huge catch—these apps violate student privacy, negatively impact some populations, and will likely never fully stop creative students from outsmarting the system.

No student should be forced to make the choice to either hand over their biometric data and be surveilled continuously or to fail their class.

Through a series of privacy-invasive monitoring techniques, proctoring apps purport to determine whether a student is cheating. Recorded patterns of keystrokes and facial recognition supposedly confirm whether the student signing up for a test is the one taking it; gaze-monitoring or eye-tracking is meant to ensure that students don't look off-screen too long, where they might have answers written down; microphones and cameras record students' surroundings, broadcasting them to a proctor, who must ensure that no one else is in the room. Even if these features were successful at rooting out all cheating, which is extremely unlikely, what these tools amount to is compelled mass biometric surveillance of potentially millions of students, whose success will be determined not by correct answers, but by algorithms that decide whether or not their "suspicion" score is too high.

Much of this technology is effectively indistinguishable from spyware, which is malware that is commonly used to track unsuspecting users' actions on their devices and across the Internet. It also has much in common with "bossware," the invasive time-tracking and worker "productivity" software that has grown in popularity during the pandemic. EFF has campaigned against the pervasive use of both of these tools, demanding anti-virus companies recognize spyware more explicitly, and pushing employers to minimize their use of bossware.

In addition to the invasive gathering of biometric data, proctoring services gather and retain personally identifiable information (PII) on students—sometimes through their schools, or by requiring students to input this data in order to register for an account. This can include full name, date of birth, address, phone number, scans of government-issued identity documents, educational institution affiliation, and student ID numbers. Proctoring companies also automatically gather data on student devices, regardless of whether they are school-issued devices or not. These collected logs can include records of operating systems, make and model of the device, as well as device identification numbers, IP addresses, browser type and language settings, software on the device and their versions, ISP, records of URLs visited, and how long students remain on a particular site or webpage.

The companies retain much of what they gather, too—whether that's documentation or video of bedroom scans. Some companies, like ProctorU, have _no time limits_ on retention. Some of this information they share with third parties. And when student data is provided to the proctoring company by an educational institution, students are often left without a clear way to request that their data be deleted because they aren't considered the data's "owner."

The leveraging of student data for commercial purposes isn't the only risk to student privacy—as we've noted time and time again, gathering vast amounts of data on people is unwise given frequent breaches and subsequent data dumps. ProctorU found that out recently, when over 440,000 user records for their proctoring service were leaked on a hacker forum last month, including "email addresses, full names, addresses, phone numbers, hashed passwords, the affiliated organization, and other information."

Aside from privacy concerns, these tools could easily penalize students who don't have control over their surroundings, or those with less functional hardware or low-speed Internet. For students who don't have home Internet access at all, they are locked out of testing altogether. They could also cause havoc for students who already have trouble focusing during tests, either because of a difficulty maintaining "eye contact" with their device, or simply because tests make them nervous. Software that assumes all students take tests the same way — in rooms that they can control, their eyes straight ahead, fingers typing at a routine pace—are undoubtedly leaving some students out.

No student should be forced to make the choice to either hand over their biometric data and be surveilled continuously or to fail their class. A solution that requires students to surrender the security of their personal biometric information and give over video of their private spaces is no solution at all.

Technology has opened up unprecedented opportunities for learning at a distance, and COVID-19 has forced us to use that technology on a scale never seen before. Yet schools must accept that they cannot have complete control of a student's environment when they are at home, nor should they want to. Proctoring apps fall short on multiple fronts: they invade students' privacy, exacerbate existing inequities in educational outcomes, and can never fully match the control schools are used to enforcing in the test hall.

Educational institutions will need to adapt fundamentally to distance learning. New technologies and new teaching methods will be a part of that. Perhaps

schools will need to reevaluate the need for closed book exams, or use fewer tests overall as compared to project-based assessments. Regardless, they should not rely on invasive proctoring apps to attempt to replace methods that only work in person. Surveillance tech has already crept into many areas of education, with some schools tracking students' social media activity, others requiring students to use technology that collects and shares private data with third-party companies, and others implementing flawed facial recognition technology in the name of safety. While there are ways to fight back against some common school surveillance, it becomes increasingly difficult when that surveillance is directly tied to students' evaluations and ultimate success. Teachers, parents, and students must not allow remote learning to become remote surveillance.

If you currently have or previously had a user account for ProctorU, check if your account was compromised in this breach at have i been pwned? and update your password.

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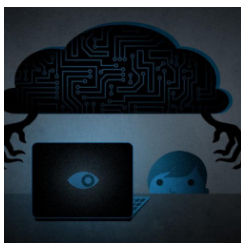
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Students Are Pushing Back Against Proctoring Surveillance Apps

Special thanks to legal intern Tracy Zhang, who was lead author of this post. Privacy groups aren't the only ones raising the alarm about the dangers of invasive proctoring apps. Through dozens of petitions across the country, and the globe, students too are pushing school administrators and teachers to...

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EFF Tells California Supreme Court Not to Require ExamSoft for Bar Exam

This week, EFF sent a letter (pdf link) to the Supreme Court of California objecting to the required use of the proctoring tool ExamSoft for the October 2020 California Bar Exam. Test takers should not be forced to give their biometric data to ExamSoft, the letter says, which...
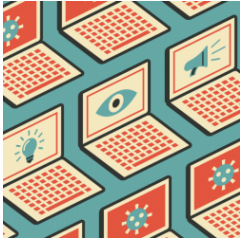
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University App Mandates Are The Wrong Call

As students, parents, and schools prepare the new school year, universities are considering ways to make returning to campus safer. Some are considering and even mandating that students install COVID-related technology on their personal devices, but this is the wrong call. Exposure notification apps, quarantine enforcement programs...

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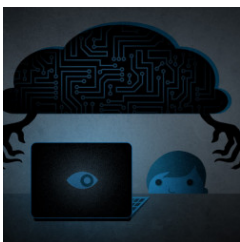
DEEPLINKS BLOG BY MONA WANG, GENNIE GEBHART | FEBRUARY 27, 2020

Schools Are Pushing the Boundaries of Surveillance Technologies

Learn more at EFF's Surveillance Self-Defense guide for students. A school district in New York recently adopted facial recognition technology to monitor students, and it is now one of a growing number of schools across the country conducting mass privacy violations of kids in the name of "safety."...

The Key to Safety Online Is User Empowerment, Not Censorship

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The Senate Judiciary Committee recently held a hearing on "Protecting Digital Innocence." The hearing covered a range of problems facing young people on the Internet today, with a focus on harmful content and privacy-invasive data practices by tech companies. While children do face problems online, some committee members seemed...

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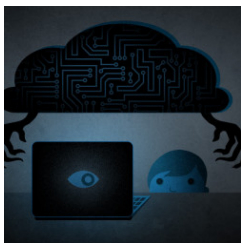
DEEPLINKS BLOG BY SOPHIA COPE, NATE CARDOZO | JANUARY 29, 2018

It's Time to Make Student Privacy a Priority

Last month, the Federal Trade Commission and the U.S. Department of Education held a workshop in Washington, DC. The topic was "Student Privacy and Ed Tech." We at EFF have been trying to get the FTC to focus on the privacy risks of educational technology (or "ed tech") for...

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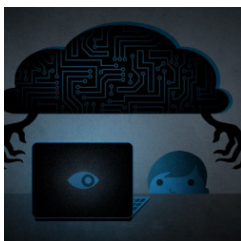
DEEPLINKS BLOG BY GENNIE GEBHART, AMUL KALIA | AUGUST 30, 2017

Student Privacy Tips for Teachers

The new school year starts next week for most schools across the country. As part of the first line of defense in protecting student privacy, teachers need to be ready to spot the implications of new technology and advocate for their students' privacy rights. Our student privacy...

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UNHACKABLE

Online school means online tests, along with computerized surveillance

By **Rachel Metz**, **CNN Business**
Updated 8:14 AM ET, Sat August 29, 2020

(CNN Business) — When Amanda Kemper found out that artificial intelligence would help monitor students during her mechanical engineering class's final exam this summer, she was worried.

Like many students, Kemper's classes at the University of Wisconsin-Madison shifted online suddenly in the spring due to the ongoing pandemic. With remote learning came remote exams: Starting in July, the university let instructors use software from Honorlock, which is one of numerous companies that can record video — and much more — of students as they take tests, and uses AI to point out any behavior that looks like cheating.

Kemper learned about Honorlock a week before her final exam and she had a number of concerns. She didn't like the idea of being recorded and having that recording sent to her professor. She has severe test-related anxiety and sometimes gets nauseous — what would happen if she suddenly had to run to the bathroom?

"It seemed like, amidst this crisis, this global pandemic happening, we were being propelled into the software that the university might not have done a lot of research on and students hadn't done the research on," she said.

She brought her concerns to her professor, who ultimately decided the class would shift to an unproctored take-home exam since the class syllabus hadn't mentioned Honorlock specifically from the start.

But with fall classes looming and the pandemic still raging, Kemper knew she'd likely encounter Honorlock again in the fall. So she also started an online petition asking the school to ban HonorLock; she sought 1,500 signatures, and as of Friday, over 1,400 people signed in support.

This is Exhibit S referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

Students at UW-Madison are far from the only ones facing this kind of AI-assisted assessment. Colleges across the United States have been forced into distance learning due to the pandemic, which means they're increasingly reliant on technology for tasks normally performed in person. This has led many to embrace software that uses webcams and AI to monitor students during tests. Other companies providing such services include Proctorio, ProctorU, Respondus, and Proctortrack. The practice may prevent cheating, but it is also upsetting some students and faculty who feel the computerized surveillance goes too far and question how well it works.

"I understand that this technology might be a part of the future of education but as with anything, our data on social media, our data anywhere else, I just want to know where it is how it's being used in a transparent way," said Marium Raza, a student at the University of Washington who opposed using such software in the spring.

An explosion of interest

Honorlock declined an interview request from CNN Business, but several other online proctoring companies said business is booming, thanks to the pandemic. David Smetters, CEO of Respondus, said it expects to use its automated proctor, Respondus Monitor, to oversee more than 20 million exams this year, four times as many as it proctored in 2019.

In the US, much of this testing surge comes from colleges and universities, though these services are also being tried for some major professional exams that are going remote. In California, for instance, the state bar exam in October will use AI-assisted proctoring software from ExamSoft.

Olsen first noticed a shift in January, with a sudden increase in the number of tests his company proctored in Australia. By February or early March, there "was just an explosion" of business, he said.

"When you compare April 2019 to April 2020, we experienced 900% growth," he said.

Proctorio, like a number of other test-proctoring services, can record test takers through their computer's webcam and microphone, along with anything they do on the computer screen. AI is used for everything from checking your identity at the start of a test to flagging instances captured on video during the test where it appears someone else has entered the room or that you're talking to another person. The company doesn't use facial recognition software, Olsen said, but it does use facial detection (this distinction refers to the ability to determine that a face is present, rather than the identification of the face). It can also use gaze detection to determine where the test taker is looking.

After a student takes a test, Proctorio sends their teacher a report highlighting different behaviors that its software finds potentially suspicious, sorted in order of suspicion, Olsen said. Instructors can review the test video at marked points and decide for themselves whether a student is trying to cheat.

"It's not like it's a magic cheat algorithm, right? We're just saying, 'Look, tell us which behaviors you want to identify,'" he said. "And we'll show you who did that the most, and when they did it, and then you can review the footage and make your own decision."

Public objections

This AI-driven analysis doesn't sit well with Raza, who was first told to use Proctorio for a biochemistry exam this spring after University of Washington classes rapidly shifted online. She was concerned about being monitored generally, but also said that, as a hijab-wearing Muslim, she prefers to be careful about what happens to photos and videos taken of her.

To voice her objections, she wrote an opinion piece for her school's newspaper urging UW to stop using Proctorio for tests. And after students in her class had issues trying out the service in advance of the exam — including one who is Indian who said that it couldn't spot her face in broad daylight until she turned toward a window — Raza's professor decided not to use it, she said.

"The thing is, I'm not anti-software; I'm not anti-technology," Raza said. "What I want and support is transparency in everything."

Cheating is an issue in higher education, according to Wendy Fischman, a project director at the Harvard Graduate School of Education. In a multi-year study she conducted with Harvard professor Howard Gardner that included data collected from 1,000 students at 10 schools, academic dishonesty ranked "least important" among issues such as mental health and alcohol and drugs, yet students also mentioned cheating as a pervasive problem.

Services like Proctorio and Honorlock will make it a bit less likely that students will cheat, and may catch some students in the act, she said. But in order to prevent students from cheating, she believes school culture needs to change so students don't want to cheat in the first place.

"I'm not sure I have a problem with that," she said of the surveillance aspects of these services. "I just think it's not going to solve the problem."

Suspicion levels

While putting the onus on course instructors rather than having AI make explicit decisions may make sense, it doesn't always lead to catching cheaters.

Jared Nielsen, an assistant professor of psychology and neuroscience at Brigham Young University in Provo, Utah, initially used Proctorio to proctor exams for an upper-level psychology course early this year that was held partly in person and partly online before the pandemic took hold in the US.

He explained that after each test the software provides instructors with a suspicion level of 0 to 100% for each student: On one exam, out of 49 students in the class, two-thirds were rated above 90%. The student who appeared least suspicious to the software received a 53%, he said.

After his teaching assistants reviewed those results, he emailed nine students who had been flagged for suspicious behavior such as staring off screen for a short period of time. Each student responded lengthily and, in his estimation, sincerely, that they had no idea they were doing anything wrong. Some offered to redo the exam in his office. He apologized.

"They just wanted to look off somewhere so they could engage their mental faculties and think through, 'What is the correct answer for this problem?'" he said.

BYU's fall classes start Monday, and the ones Nielsen is teaching will be remote. He isn't planning to use Proctorio again.

"At the end of the day, I'm just putting my trust in the students," he said.

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Students Are Rebelling Against Eye-Tracking Exam Surveillance Tools

Invasive test-taking software has become mandatory in many places, and some companies are retaliating against those who speak out.

By Todd Feathers   By Janus Rose

September 24, 2020, 6:00am   SHARE   TWEET   Snap

As a privacy-minded computer science student preparing to start his first year at Miami University, Erik Johnson was concerned this fall when he learned that two of his professors would require him to use the digital proctoring software Proctorio for their classes. The software turns students' computers into powerful invigilators—webcams monitor eye and head movements, microphones record noise in the room, and algorithms log how often a test taker moves their mouse, scrolls up and down on a page, and pushes keys. The software flags any behavior its algorithm deems suspicious for later viewing by the class instructor.

In the end, Johnson never had to use Proctorio. Not long after he began airing his concerns on Twitter and posted a simple analysis of the software's code on Pastebin, he discovered that his IP address was banned from

accessing the company's services. He also received a direct message from Proctorio's CEO, Mike Olsen, who demanded that he take the Pastebin posts down, according to a copy of the message Johnson shared with Motherboard. Johnson refused to do so, and is now waiting to see if Proctorio will follow up with more concrete legal action, as it has done to other critics in recent weeks.

"If my professors weren't flexible, I'd be completely unable to take exams," Johnson said. "It's insane to think that a company [or] CEO can affect my academic career just for raising concerns."

His case is just one example of how college campuses are revolting against the use of digital proctoring software, and the aggressive tactics employed by proctoring companies in response to those efforts. In recent weeks, students have started online petitions calling for universities across the world to abandon the tools, and faculty on some campuses, like the University of California Santa Barbara, have led similar campaigns, arguing that universities should explore new forms of assessment rather than subjecting students to surveillance.

"We need to really think long and hard about how we are adapting," Jennifer Holt, a film and media studies professor at UCSB, told Motherboard. "We're supposed to be protecting our students."

Surveillance at Home

Algorithmic proctoring software has been around for several years, but its use exploded as the COVID-19 pandemic forced schools to quickly transition to remote learning. Proctoring companies cite studies estimating that between 50 and 70 percent of college students will attempt some form of cheating, and warn that cheating will be rampant if students are left unmonitored in their own homes.

Like many other tech companies, they also balk at the suggestion that they are responsible for how their software is used. While their algorithms flag behavior that the designers have deemed suspicious, these companies argue that the ultimate determination of whether cheating occured rests in the hands of the class instructor. The companies consider the algorithms proprietary and Proctorio, in particular, has reacted swiftly to prevent anyone with access to its training material or underlying code from disclosing their analyses.

"Any plan that calls for schools to just 'stop using' proctoring will make cheating more common than it already is, escalating a severe threat to all higher education," Scott MacFarland, the CEO of ProctorU, another proctoring vendor, wrote in an email to Motherboard. Comparing his product's deterrent effect to that of more ubiquitous surveillance technology, he added "we may not love the idea of being on camera every time we visit a bank or go to a convenience store, but no one is suggesting taking them down."

There is little peer-reviewed evidence about how digital proctoring affects students' honesty and test-taking ability, and the little research that has delved into the issue doesn't offer a clear consensus. A 2018 study tracking 2,686 students across 29 courses found that those whose exams weren't monitored using Proctorio received grades 2.2 percent lower than those whose were. The authors concluded that the results were likely a result of cheating by students not using Proctorio. But a 2019 study involving 631

students found that test takers who felt higher levels of anxiety during exams performed worse, and that the cohort of students monitored by proctoring software felt more anxiety than those who weren't.

Suspicion Levels

Proctorio is intended to be used to uphold academic integrity by discouraging cheating. However, some incidents will still occur. When these do happen, Proctorio makes the identification of these cases as simple as possible. One way is through the suspicion level. The suspicion level is a percentage that represents low, medium, or high suspicion for an individual's exam attempt.

The suspicion level is a quick calculation based on the aggregation of frames (captured activity) during the exam that were deemed suspicious and the detection of abnormal (deviation from the class norm) behaviour. If the suspicion level shows a large percentage, then this is an exam attempt that should be considered for further review.

The suspicion level will increase or decrease depending on how heavily each **Behaviour Setting** is weighted and which abnormalities are enabled.

A SLIDE FROM PROCTORIO'S TRAINING MATERIALS, DETAILING HOW THE SYSTEM MEASURES "SUSPICION LEVELS" WHILE STUDENTS TAKE EXAMS.

Students' and educators' objections to exam proctoring software go beyond the privacy concerns around being watched and listened to in their bedrooms while they take a test. As more evidence emerges about how the programs work, and fail to work, critics say the tools are bound to hurt low-income students, students with disabilities, students with children or other dependents, and other groups who already face barriers in higher education.

Every day for the last week, Ahmed Alamri has opened ExamSoft and attempted to register for the practice version of the California state bar exam. Every time, the software's facial recognition system has told him the lighting is too poor to recognize his face. Alamri, who is Arab-American, has attempted to pass the identity check in different rooms, in front of different backgrounds, and with various lighting arrays. He estimates he's attempted to verify his identity as many as 75 times, with no success. "It just seems to me that this mock exam is reading the poor lighting as my skin color," he told Motherboard.

Alamri isn't alone. Law students around the country are organizing to fight against the use of any kind of digital proctoring software like ExamSoft on bar exams. In California, two students have filed an emergency petition with the state supreme court requesting that it cancel the exam entirely and institute a new form of assessment. A similar effort is underway in Illinois, while Louisiana, Oregon, and Wisconsin have already scrapped their upcoming bar exams as a result of student pressure. Other states, including New York, are fumbling for solutions as deadlines for the exams quickly approach; at one point, New York's test proctor announced it was going to ban the use of "desktop computers" to take the test.

In their petition, the students say the use of ExamSoft discriminates against people of color because facial recognition technology has been shown on numerous occasions to be worse at recognizing people with darker skin tones, and particularly women of color. The California bar exam would require test takers to verify their identity with facial recognition checks eight separate times, according to the petition, and a single failure would end the test.

The petitioners also conducted a survey of 1,413 law students who were preparing to take the bar exam. "78.8 percent of African-American/Black respondents, 91.7 percent of Alaskan Indian or Native American respondents, 71.5 percent of Asian/Pacific Islander respondents, 81.4 percent of Southwest Asian North African respondents, and 75.9 percent of Latinx, Latino/a, Hispanic respondents" reported that they either would not have reliable internet during the exam, or were unsure whether their connection would be reliable.
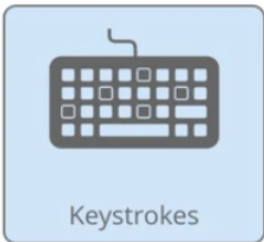
"They aren't taking into consideration people from underprivileged communities," Alamri said. "This sort of online exam is really measuring a person's generational wealth and not their knowledge of the law."

Abnormalities

Another major point of contention between proctoring companies and university communities has been the algorithmic techniques the software uses to detect potential cheating.

In training documents Proctorio provides to universities, the company explains that its software determines whether a test-taker's "suspicion level" at any given moment is low, moderate, or high by detecting "abnormality" in their behavior. If a student looks away from the screen more than their peers taking the same exam, they are flagged for an abnormality. If they look away less often, they are flagged for an abnormality. The same goes for how many keystrokes a student makes while answering a question, how many times they click, and a variety of other metrics. Variation outside the standard deviation results in a flag.

That methodology is likely to lead to unequal scrutiny of people with physical and cognitive disabilities or conditions like anxiety or ADHD, Shea Swauger, a research librarian at the University of Colorado Denver's Auraria Library who studies educational technology, told Motherboard. "These coders are defining, mathematically, the ideal student body: how often it does, or doesn't do, these certain attributes, and anything outside of that ideal is treated with suspicion," he said.

Keystrokes

- This will alert the professor when the student typed on the keyboard significantly more or less than the other students.

- This information could tell you something about the test taker's process. For example, if you have a lot of written responses in the exam, you may want to enable this option because a student using significantly fewer keystrokes could indicate they were lifting their responses from an outside source.

- Using this in conjunction with Record Screen could show you if the student is getting information from external sources.

A SLIDE FROM PROCTORIO'S TRAINING MATERIALS DETAILING HOW THE SOFTWARE DETECTS "ABNORMALITIES" BY ANALYZING KEYSTROKE PATTERNS.

Proctorio and other proctoring companies strongly disagree with that assessment. "The biggest thing is that we're not making any sort of academic decisions, we're just providing a quicker way [for teachers] to review places in the exam based on the things they're looking for," Olsen, Proctorio's CEO, told Motherboard in an interview. Teachers can choose which types of behaviors to monitor, and it's up to them to decide whether an abnormality constitutes cheating, he added.

Students from multiple schools across the US told Motherboard that while teachers ultimately choose whether and how to use exam-monitoring software like Proctorio, they often do so with no guidance or restrictions from the school's administration.

"Each academic department has almost complete agency to design their curriculum as far as I know, and each professor has the freedom to design their own exams and use whatever monitoring they see fit," Rohan Singh, a computer engineering student at Michigan State University, told Motherboard.

Singh says that students at the school objected after professors began using an exam-monitoring software called Respondus without proper notice at the end of the spring semester, when many universities began converting to online learning. He added that while it's ultimately up to the instructor how the software is used, it generally helps teachers who are predisposed toward doling out Academic Dishonesty Reports, or ADRs. "As a rule of thumb, the professors who choose to use Respondus are the professors more inclined to use their discretion to hand out ADRs," he said.

Nearly a dozen other students told Motherboard that they or their peers had objected to professors' use of exam-monitoring software at other state universities across the US.

Arielle G 🌾
@LegendAriee16

.......in the middle of a pandemic... school is a joke rn.. #ncat

> **NO HEAD COVERING FOR BOTH MALES AND FEMALES. THIS MEANS NO WHAT I CALL SKULL CAPS AND REGULAR CAPS.**
>
> **A LOT OF HEAD AND EYE MOVEMENTS FOR A SHORT TIME PERIOD. A STUDENT IN 6 MINUTES HAD 776 HEAD AND EYE MOVEMENTS. ANOTHER STUDENT HAD 624 EYE AND HEAD MOVEMENTS WITHIN 8 MINUTES.**
>
> **THAT IS AN INDICATION OF EYES MOVING AWAY FROM THE SCREEN.**
>
> **NOW IF THE PRETORIO BEHAVIOR DOES NOT IMPROVE ON CONNECT QUIZ 3, THEN YOU WILL HAVE TO BUY THE $15 VERSION OF PROCTORIO.**
>
> **I TALKED TO Mc-GRAW-HILL AND THEY SAID THAT A LOT OF NEGATIVE BEHAVIOR WAS TAKING PLACE.**
>
> **I would hate to have to write you up for online cheating which gets filed in the Dean's office.**

9:45 AM · Sep 10, 2020   ⓘ

♡ 106.6K   ⚡ See the latest COVID-19 information on Twitter

In April, Swauger, who is organizing an effort to convince the University of Colorado system to drop Proctorio, published a peer-reviewed article critical of algorithmic proctoring in the journal Hybrid Pedagogy. In response, Proctorio sent a letter to the journal demanding a retraction. The journal's editors declined.

The company's response to Ian Linkletter, a learning technology specialist at the University of British Columbia, in Vancouver, was even sharper. After Linkletter began sharing Proctorio training videos and documents that

explained the company's abnormality methodology on Twitter, the videos were removed from YouTube, and Proctorio filed for a court injunction to prevent Linkletter from sharing its training material. Linkletter declined to comment for this article due to the pending legal case.

Olsen said Proctorio welcomes public critiques of its service, but takes action when critics share records the company hasn't made public.

Other proctoring companies have also been litigious when faced with criticism.

In March, after students approached faculty members at the University of California Santa Barbara, the faculty association sent a letter to the school's administration raising concerns about whether ProctorU would share student data with third parties. The faculty asked UCSB to terminate its contract with the company and discourage professors from using similar services.

In response, a ProctorU attorney threatened to sue the faculty association for defamation and violating copyright law (because the association had used the company's name and linked to its website). He also accused the faculty association of "directly impacting efforts to mitigate civil disruption across the United States" by interfering with education during a national emergency, and said he was sending his complaint to the state's Attorney General.

Although ProctorU never filed a lawsuit against the UCSB faculty association, the threat had a chilling effect on professors' willingness to discuss the software.

Holt, one of the faculty members who first raised questions about proctoring software, declined to talk to Motherboard specifically about the ordeal or ProctorU. But in general, she remains worried about the spread of proctoring tools on campuses.

"We must do better than subjecting our students to surveillance and violations of their privacy," she said. "We must do better than allowing algorithmic policing through biometric surveillance as the new normal for education."

TAGGED: SURVEILLANCE, ALGORITHMS, MACHINE LEARNING, SCHOOL SURVEILLANCE

How It Feels When Software Watches You Take Tests

Students say that monitoring programs like Proctorio and ExamSoft discourage them in the moments they're trying to prove themselves.

Sabrina Navarro, a junior at California State University, Fullerton, over Zoom. Amr Alfiky/The New York Times

By Anushka Patil and Jonah Engel Bromwich

Sept 29, 2020

f y ▪ ↗ ◫ 25

An unusual school year has started in earnest, and with it has come the return of digital proctoring programs. This is software that can lock down students' computers, record their faces and scan their rooms, all with the intention to thwart cheating.

These programs, with names like ProctorU and Proctorio, first raised alarms about privacy as they were adopted by schools. Now many students are finding that the programs they're required to use may not have been well-designed to consider race, class or disability — and in some cases, simply don't work. Many are organizing on and across campuses for alternatives or for their eradication.

The rigidity of online proctoring has exacerbated an already difficult year, students say, further marginalizing them at the very moments they're trying to prove themselves. Here are some things that can go wrong with testing and digital surveillance.

'It Feels Like an Invasion of Privacy'

Before the pandemic, Sabrina Navarro, 20, a junior at California State University, Fullerton, hadn't thought to register her chronic tic disorder with her university's disability services office. The disorder, which she'd lived with since she was 6, hadn't ever affected her education.

"I'm good at covering it up," she said of her disorder. "A lot of my friends don't even know that I have it."

This semester, though, scared that her involuntary mouth movements would get her flagged for cheating, she went to get medical records to prove her diagnosis and request accommodations.

If the majority of her classes didn't require Proctorio, this wouldn't be a concern, she said.

But Ms. Navarro feared Proctorio would record her tics and send her professors footage for review. Ticcing happens more frequently for her during stressful situations, like an exam.

"Just the fact that professors might have access to seeing me ticcing, over and over again — it feels like an invasion of privacy with something that all my life, I've been pretty good at hiding," she said, speaking from her family home in Alhambra, Calif. that smelled "like fire" because of blazes raging nearby.

Students who request accommodations for their disabilities often have to cope with inaccurate judgments that they're cheating, said Maria Town, president of the American Association of People with Disabilities. Monitoring their behavior for compliance creates an accessibility barrier.

Pandemic-era SATs: Pencils Down, Face Masks Up

The inside scoop on standardized testing. Moms are balancing working and parenting from home. And an explainer about why kids get less sick than adults.

Sept. 28, 2020

Put Down Your No. 2 Pencils. But Not Your Face Mask.

The coronavirus presents a daunting new test for SAT takers, including our reporter, whose Princeton Review guides haven't been cracked in years.

Sept. 27, 2020

"It can be difficult not only to request, receive and use accommodations," she said. "If you are then accused of cheating on an exam that you worked really hard for because it's not accessible, its just going to amplify all those emotions."

CORONAVIRUS SCHOOLS BRIEFING: *It's back to school — or is it?*   **Sign Up**

Proctorio's chief executive, Mike Olsen, said in an interview that his software did not penalize students for perceived infractions, but instead relied on faculty to make judgment calls about test-taking behavior. "We ask the faculty before they review the footage, what they're interested in," he said. "That could be getting up and leaving the exam session, it could be other voices in the room. When they set that, what we're going to do is identify those moments in time. For the example of a child coming and asking a question or saying they want a drink of water, the faculty is going to see that and generally — I can't speak for all faculty — generally the faculty is going to say that's not an issue."

'Why Is This So Hard?'

Jazi, 19, a student at the University of Texas at San Antonio, finished her freshman year remotely after in-person instruction was suspended in March. (The New York Times agreed to not use her full name because she was afraid of retaliation from the school.) Doing class work from home, she was also charged with taking care of her younger siblings, ages 12 and 8.

Students using Proctorio are generally recommended to find quiet, well-lit places to take exams. Moving offscreen or speaking to someone else in a room, both things Jazi needed to do while watching her siblings, can be flagged as suspicious.

When her youngest sibling would bang on doors in the middle of an exam, she'd try not to look away from her screen.

"I was ignoring him the entire time, just saying, 'Please, God, don't let them email me about the sound,'" as her mic levels spiked onscreen, she said.

Jazi hadn't previously felt out of place as a first-generation student on scholarships at the school, where a number of her peers come from a similar background. But being sent home to juggle school and child care on camera made her feel like she didn't belong.

"Some of my classmates were sent back to a full home. Two parents. They don't have to work. They just focus on their classes," she said.

When her sophomore year started in the fall, Jazi emptied her savings account to move back to campus. "I knew that if I had stayed home, there was no way I would pass," she said. "You constantly ask 'Why is this so hard?' Because you know it doesn't have to be that way. But it is."

'It Doesn't Seem Worth It to Me'

T. Sydney Bergeron Mikus, 25, started studying for the LSAT in 2016. They (Sydney uses gender-neutral pronouns) have a spate of chronic illnesses, coupled with cognitive impairments that they describe as similar to A.D.H.D.

It adds up to a laundry list of conditions that can be difficult to explain to others. Accustomed to being doubted, when Sydney was scheduled to take the LSAT-Flex this fall — an adjusted version of the test for law school — they got a jump on the paperwork that would allow them some accommodations. This includes extra water and snacks on their desk.

But when the time came, the test's proctor, from the company ProctorU, was not aware that those accommodations had been approved. During the 360-degree room scan required by the company before testing, Sydney's proctor questioned the water and food, forcing them to pull up documentation during the test period.

Things got worse from there, Sydney said. The software glitched frequently, switching from the LSAT screen to the ProctorU setup screen.

"Every time it would interrupt me, I would lose my train of thought and had to reread the passage," Sydney said.

Then, during a break between test sections, the software kicked Sydney out entirely. They sought help from ProctorU's support staff. They were connected to a new proctor, again having to explain the food and water on the desk.

After they finished the second section, they were once again booted out of the test.

Overall, the test "took an hour longer than I expected total," Sydney said. (ProctorU did not return a request for comment on experiences like Sydney's.) Sydney has not yet decided whether to retake the test, though they are leaning toward keeping whatever score they receive. "It doesn't seem worth it to me to risk experiencing issues with ProctorU yet again," they said.

The chief executive of ProctorU, Scott McFarland, said in a statement that privacy issues restrained the company from commenting about specific experiences, but that "ProctorU takes accommodation exceptionally seriously."

"It is our policy to not only make approved accommodations but investigate and make changes any time a test-taker or testing institution feels those accommodations have not been met completely," his statement said. "There is no excuse for doing otherwise. When an error does occur, we apologize and pledge to

not only fix it but do better in making remote testing and assessment the best possible experience for everyone."

'I'm Just Suffering'

Sergine Beaubrun, 30, graduated law school in May. Before taking the bar exam in New York, she had to complete a "mock exam" from ExamSoft, a much-criticized company administering the exam remotely this year. One facet of the mock exam involves that the software "identify" the tester's face. It could not recognize Ms. Beaubrun, who is Afro-Latina.

School Reopenings ›

Back to School
Updated Oct. 7, 2020

The latest on how schools are reopening amid the pandemic.

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• Cases are spiking at Appalachian State in North Carolina, where a student died last week, leading to calls for stronger safety measures.

• The "In Her Words" newsletter looks at how America's teaching workforce became undervalued, overly relied on and predominantly female.

"It couldn't see me at all," she said. "It was the middle of the day so the sun was still shining. I was in a boardroom, so bright lights, fluorescent lights. The ones that make you look really ugly. I was sitting directly under them."

Futureesq1990
@futureesq1990

@ExamSoft I FINALLY figured out ON MY OWN 4 hours later (still on hold for an EXAM SOFT chat rep) HOW TO GET TO MY MOCK EXAM... ONLY TO BE TOLD THE SYSTEM CANT RECOGNIZE ME. I AM IN A BOARD ROOM WITH ALL OF THE LIGHTS TURNED ON AND THE SUN WAS STILL UP. MAKE IT MAKE SENSE.

Due to poor lighting, we were unable to identify you. Please ensure there is adequate lighting.

Retake

5:45 PM · Sep 16, 2020

♡ 210   💬 51 people are Tweeting about this

She tried again, and again, but the program failed to recognize her. The image it was attempting to process made her skin darker than it was. Finally, she stood up on the table where she was working

and put her laptop directly under the light. Only then was her picture accepted.

Ms. Beaubrun wants to practice immigration or civil rights law. She graduated with hundreds of thousands of dollars in debt, so passing the bar exam has become an immediate material concern. She started experiencing anxiety attacks for the first time earlier this year. "I'm just suffering, hoping that I can take this exam," she said.

'I Do Not Believe My Features Are Particularly Anomalous'

Areeb Been Khan, 27, also graduated law school in May. His experience preparing for the bar has been similar.

"I tried a bunch of things like switching rooms, sitting in front of a window, going to the bathroom where there was bright light, and even putting a desk lamp directly in front of my face as seen in my tweet," he wrote in an email.

Alivardi Khan @uhreeb · Sep 7, 2020

The @ExamSoft software can't "recognize" me due to "poor lighting" even though I'm sitting in a well lit room. Starting to think it has nothing to do with lighting. Pretty sure we all predicted their facial recognition software wouldn't work for people of color. @DiplomaPriv4All

Alivardi Khan @uhreeb

Ok @ExamSoft support told me to "sit directly in front of a lighting source such as a lamp." I'm receiving the same issue preventing me from completing the NY UBE mock exam. Facial recognition technology is racist. @DiplomaPriv4All do y'all think I have "adequate lighting"?

9:05 AM · Sep 11, 2020

♡ 390   ⬭ 160 people are Tweeting about this

Mr. Khan said five days later, in a position he had already tried, the software was suddenly able to recognize his face and allowed him to proceed. He said ExamSoft support told him this happens sometimes, and the software "needed a baseline for my face."

If the issue arose on the day of the actual bar, Mr. Khan was told to contact ExamSoft support again, which could cut into his time for the exam itself. The company responded "that I would need to coordinate extra time with the N.Y. Bar Association myself," he said.

"I am a brown person with a beard. I do not believe my features are particularly anomalous," Mr. Khan said.

"I cannot imagine any larger disaster than spending the last four months of my life unemployed and uninsured during a global pandemic in order to study for an exam that I cannot take on exam day because of racist technology," he said.

Asked about experiences like Ms. Beaubrun's and Mr. Khan's, Nici Sandberg, a spokeswoman for ExamSoft, said "the vast majority of those who have attempted to complete a mock exam have successfully done so. We're working around the clock to ensure a successful exam experience for all bar candidates."

This article was updated after publication to provide comment from ProctorU.

A school year for the history books

Tracking Covid at U.S. Colleges and Universities

Large outbreaks expanded on campuses as new semesters were underway.

Put Down Your No. 2 Pencils. But Not Your Face Mask.

The coronavirus presents a daunting new test for SAT takers, including our reporter, whose Princeton Review guides haven't been cracked in years.

Sept. 27, 2020

Using Technology to Tailor Lessons to Each Student

Computer algorithms and machine learning are helping students succeed in math. Some experts see such efforts as a crucial next step in education.

Sept. 29, 2020

Jonah Bromwich is a news and features reporter. He writes about cultural change — shifts in the way we date, eat, think and use language and technology — for the Style section. @jonesieman

READ 25 COMMENTS

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Andre D. Wagner for The New York Times

Welcome to Homecoming!

8h ago

Getty Images

Mother's Little Helper Is Back, and Daddy's Partaking Too

Oct. 3
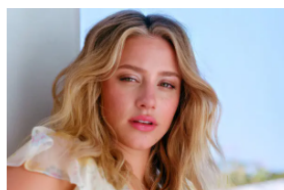
Lindsay Ellary for The New York Times

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Oct. 3

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Oct. 3

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Sept. 29

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Sept. 28

Editors' Picks

Philip Cheung for The New York Times

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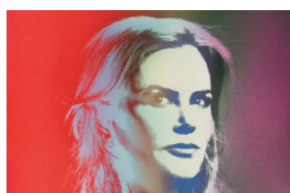
Illustration by Bráulio Amado

Nicole Kidman Leans Into the Pain

Oct. 6

Photograph by Heami Lee. Food stylist: Maggie Ruggiero. Prop stylist: Rebecca Bartoshesky.

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Chopra
Oct. 5

Sept. 30

The New York Times

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FROM PRACTITIONER TO PEDAGOGUE

a blog about edtech, academia, and life

≡ **MENU**

This is Exhibit V referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

In Defence of Ian Linkletter

👤 by Brenna   📅 September 3, 2020

News broke this evening that Proctorio has served notice of a lawsuit to Ian Linkletter in response to his vital work publicizing the mechanisms by which Proctorio works. The Vancouver Province ran the story today.

Ian Linkletter is one of the most ethical, aware, and student-centred learning technologists working in Canada today. Ian's central focus is always care, and his concerns with the entire class of proctoring tools is well-documented. His careful investigation in this field, including the tweets in question, help to better inform the work of all learning technologists. To do our jobs properly, we need access to information and we need to understand the impact of our choices on the students we serve. Without Ian's work, we would know less. His work is scholarship, and his work is care.

We demonstrate care for students by trusting students. All proctoring tools are open to critique from those working within this discipline to reshape an academic culture that stands in opposition to student trust, and that increasingly relies on surveillance technologies to replace the difficult work of assessment. If these tools want us to trust them, we need to understand how they work. We need critics like Ian to force transparency in spaces where it is difficult to find, as we cannot critique what we don't know. Ian's attempts to shine light in these dark corners should be — and are, by the EdTech community — met with gratitude.

Ian's work is part of a larger body of scholarly critique on the place of surveillance technologies in education and should be supported and defended as such, alongside works like:

- "Our Bodies Encoded" by Shea Swauger
- "Centring a Critical Curriculum of Care During Crisis" by Maha Bali
- "School Work and Surveillance" by Audrey Watters
- "A Guide for Resisting EdTech" by Sean Michael Morris and Jesse Stommel
- "Spotlight on Alternative Assessment Methods" by Tim Fawns and Jen Ross

The first iteration of this letter was signed by the following scholars, educational technologists, and interested parties. If you would like to add your support to this letter, please comment below and your name will be added to future iterations.

In solidarity.

Brenna Clarke Gray
Coordinator, Educational Technologies
Thompson Rivers University

Laura Gibbs, PhD
Online Instructor
University of Oklahoma

Hannah McGregor
Assistant Professor
Simon Fraser University

Bonnie Stewart
Assistant Professor of Online Pedagogy & Workplace Learning
Faculty of Education
University of Windsor

Dave Cormier
Learning Specialist, Digital Learning Strategy & Special Projects
Office of Open Learning
University of Windsor

Autumm Caines
Instructional Designer
University of Michigan – Dearborn

Names Added 5 September 2020:

Anne-Marie Scott
Deputy Provost
Athabasca University

Lucia Lorenzi
UBC Alumna

Arley Cruthers
Instructor – Applied Communications
Kwantlen Polytechnic University

Kira Tomsons
Faculty, Philosophy and Humanities
Douglas College

Dr IE Marais,
Department of Anthropology and Archaeology,
University of South Africa

Phillip Dawson
Associate Professor
Centre for Research in Assessment and Digital Learning (CRADLE)
Deakin University,
Melbourne, Australia

Corey Sparks
Assistant Professor
Department of English
California State University, Chico

Colin Madland
Manager, Online Learning, TWU
PhD student in Educational Technology, UVic

Mia Zamora
Associate Professor,

Director of MA in English, Writing Studies
Kean University

Aidan Mundle
Student,
University of British Columbia.

Alan Levine
Independent Education Technology Consultant

Irwin DeVries

Kate Bowles
Associate Dean International and former Head of Education Design
University of Wollongong,
Australia

Jon Fulton

Maha Bali

Mira Vogel,
Senior Teaching Fellow,
King's College London

Joanna Stroud
Head of Online Learning
University College London

Pat Lockley

Phil Barker,
Independent Learning Technology Consultant.

Chris Miciek
Director, Career Development Center
Thomas Jefferson University

Lee Skallerup Bessette

Learning Design Specialist

Georgetown University

Luke Waltzer

Director, Teaching and Learning Center

The Graduate Center, CUNY

Charles Logan

PhD Student in Learning Sciences

Northwestern University

Dorothea Salo

Distinguished Faculty Associate

Information School

University of Wisconsin-Madison

Rob Proulx, PhD

Lecturer

University of Minnesota Crookston

Chad Flinn

Instructor

BCIT

Peggy French

Open Education Librarian | Curriculum Designer

Mohawk College of Applied Arts & Technology

Hamilton ON

Terry Greene

ELearning Designer

Trent University Online

Margy MacMillan

Professor Emerita

Mount Royal University

Matt Crosslin, PhD

Instructional Designer

Part-Time Faculty, UTRGV

Tracy Stuntz, EdD
Instructional designer
Clovis Community College

Apostolos Koutropoulos

Sarah Elaine Eaton, PhD
Associate Professor and Educational Leader in Residence, Academic Integrity
University of Calgary

Leo Havemann
Digital Education Advisor
University College London

Josh Seeland
Academic Integrity & Copyright Officer
ACC
Brandon, Canada

Parm Gill,
Learning Designer

Tim Fawns

Xinli Wang, Ph.D
Instructor
University of Manitoba

Mahrya Burnett
Scholarly Communications Librarian
University of Iowa

Mel Guille
Courseware Technical Writer
Onlea Corporation

Jim Groom

Giulia Forsythe

Shea Swauger
Researcher Support Department Head
University of Colorado Denver

Heidi Tiedemann Darroch

Timothy McGee
Chaplain and Assistant Professor of Religion
Illinois College

Logan Murray, Ed.D
Analyst
California Community Colleges

Paul Hibbitts
Designer and Educator
Vancouver, BC
Canada

Adam Beauchamp
Assistant University Librarian
Florida State University

Mary Burgess
Executive Director
BCcampus

Erin Beattie
Manager, Marketing and Communications
BCcampus
Victoria, B.C.
Canada

Arianna Cheveldave
Coordinator, Open Education
BCcampus

Denise Goudy
Director, Collaborative Projects
BCcampus
Victoria, BC
Canada

Amanda Coolidge
Director, Open Education
BCcampus

David Carter
Assistant Professor
University of Utah

Michelle Harrison
Senior Instructional Designer, Open Learning
Thompson Rivers University,
Kamloops, BC

Stephen Doubt
Instructional Designer
Thompson Rivers University
Kamloops, BC

Ken Monroe
Instructional Designer
TRU – Open Learning

Karolina Karas
Strategist, Marketing and Communications
BCcampus
Victoria, B.C.
Canada

Catherine Cronin

Cristina Colquhoun
Instructional Designer
Oklahoma State University

Jördis Weilandt
Instructor and Teaching Development Facilitator
University of Lethbridge/ AB

Erin Reid
PhD Candidate
Faculty of Education, McGill University

Rajiv Jhangiani
Acting Vice Provost, Teaching & Learning
Kwantlen Polytechnic University

Caley Ehnes, PhD
Instructor
College of the Rockies
Cranbrook, BC

Tannis Morgan
Advisor, BCcampus

Jon Beasley-Murray
Associate Professor
University of British Columbia

Leeann Waddington
Manager, Learning Technology and Educational Media
Kwantlen Polytechnic University

Lisa Gedak
Teaching and Learning with Technologies Strategist
Kwantlen Polytechnic University (KPU)

George Veletsianos, PhD
Professor
Canada Research Chair in Innovative Learning and Technology
Royal Roads University
Victoria, BC

Robin Leung
Educational Media Strategist
Kwantlen Polytechnic University

Shawna M. Brandle
Associate Professor, Kingsborough Community College

Brenda M. Stoesz, PhD
Faculty Specialist (Academic Integrity Initiative)
The Centre for the Advancement of Teaching and Learning, University of Manitoba
Winnipeg, MB, Canada

Theresa Southam, Chair
Teaching and Learning Institute
Selkirk College

Karen Meijer-Kline
Scholarly Communications Librarian
Kwantlen Polytechnic University

Troy Welch

David Golumbia
Assoc Prof, Digital Studies
Virginia Commonwealth University

Shawn Graham,
Full Professor, Digital Humanities
Dept of History
Carleton University

Jason Toal
Interaction Designer,
Centre for Educational Excellence
SFU

Mandy Henk
CEO, Tohatoha Aotearoa Commons

Donna Lanclos, PhD
Consulting Anthropologist

Erika Smith, PhD
Associate Professor & Faculty Development Consultant
Mount Royal University

Paul Sopcak, Ph.D.
Coordinator, Student Conduct, Community Standards and Values
Instructor, Humanities Department
MacEwan University, Edmonton, Canada

Ross McKerlich
Open Education Advisor
BCcampus

Dr. Robin DeRosa, Director
Open Learning & Teaching Collaborative
Plymouth State University

Terence Linkletter,
Emeritus Senior Lecturer in IT,
Central Washington University

Duane Seibel

Tim Clarke,
Instructional Designer,
Muhlenberg College, Pennsylvania

Maureen Glynn
Senior eLearning Designer
Trent Online, Trent University

Paul-Olivier Dehaye

Greg Rodrigo
Faculty Developer

Georgian College

Liz Morrish

Tracy Roberts
Director, Learning & Teaching
BCcampus

Ika Willis
Associate Dean, Education
Faculty of the Arts, Social Science and Humanities
University of Wollongong, Australia

Brandon Carson
Learning Technologist Specialist and Part-time Professor
Durham College

Carolyn Ives

Laura MacKay
Director, Centre of Teaching Excellence
Capilano University

Brian Lamb
Director, Learning Technology & Innovation
Thompson Rivers University

Helen Lee
Acting Program Director, Centre for Teaching, Learning & Innovation
Justice Institute of British Columbia

Julia Burnham
Senator and MA Student in Educational Studies
UBC Vancouver

Dr Doug Reid

Stephanie Tate
Learning Strategist, Academic Integrity

MEd Student
Thompson Rivers University

Helen Beetham
Researcher, University of Wolverhampton UK

Mary Hanlon

Conor Galvin

Prof Martin Weller
UK Open University

Joyce Kim, Master of Educational Technology,
Learning Designer & Curriculum Leader.

Dr. Jen Ross,
Co-director for Centre for Research in Digital Education,
University of Edinburgh.

Robert Gray
Contract Lecturer, Retired
Carleton University / University of New Brunswick

Joanne Kehoe
Lead Educational Developer
McMaster University

Christine Dewar
Performing and Fine Arts
Douglas College

Wendy Hulko,
Associate Professor,
Social Work & Human Service,
Thompson Rivers University

Gabriel Delaney
Bachelor's of Fine Arts

UBCO ALMUNI

Steven Weidner
Senior Instructional Technologist
New York Chiropractic College

Tobias Steiner
Community-led Open Publication Infrastructures for Monographs (COPIM)
Centre for Postdigital Cultures
Coventry University

Jennifer Hardwick
Department of English
Kwantlen Polytechnic University

Elli England
Faculty, English Department
Fullerton College

Sharon Flynn
Enhancing Digital Teaching & Learning
Irish Universities Association

Dennis Yip
Justice Institute of British Columbia

Sun-ha Hong
Assistant Professor
School of Communication
Simon Fraser University

William Chen
Student at the University of British Columbia (Political Science)

Duncan McHugh
Digital & Instructional Media Producer
UBC Faculty of Land and Food Systems

Julia M Wright,

George Munro Chair in English Literature & Rhetoric,
Dalhousie University

Jason Haslam

Billy Meinke-Lau

Stoo Sepp, PhD
Independent Educational Technology researcher and former UBC Staff

David N. Wright

Maha Al-Freih
Assistant Professor of Instructional Design & Technology
Princess Nourah Bint Abdulrahman University

Clarissa Sorensen-Unruh
FT Chemistry Faculty
CNM Community College

Helen DeWaard,
Instructor, Faculty of Education, Lakehead University, and
Learning Designer, University of British Columbia

Ann Gangé

Robynne Devine

Names Added 7 September 2020:

Doug Holton
Director of Teaching and Learning
Florida Polytechnic University

Gerol C. Petruzella, Ph.D.
Associate Director, Academic Technology
Massachusetts College of Liberal Arts

Kieran Mathieson
Associate Professor
Oakland University

Kieran Forde
PhD student
University of British Columbia

Miles Schaffrick
Student, Department of Political Science
University of British Columbia

James Binks
Alumni, University of British Columbia

Ranil Prasad
UBC B.A Student (Political Science)

Bryce Wilson
Student,
University of British Columbia

Dominique St-Arnaud
Student, University of British Columbia

Rik Blok, PhD
Sessional Lecturer
Computer Science, UBC

Suhani Jayatilake
UBC Alumna

Benjamin Cheung
Lecturer, Department of Psychology
University of British Columbia

Zara Zaman
Student of University of Toronto

Manal Nadeem
Student,
University of Toronto

Alisar Abdel Rahman,
Student – University of Toronto Mississauga

Nada Al-Towaity
computer science, mathematics, and stats
University of Toronto Mississauga

Kota Chang
Student,
University of British Columbia

Dvir Hilu
Student
University of British Columbia

Isak Boyd
Student
University of British Columbia

Isha Mehta.
Student, University of British Columbia

Natasha Hannon

Melissa Jakubec
Principal Instructional Designer
Thompson Rivers University

Anshul Kulkarni
Student
Faculty of Arts
University of British Columbia, Vancouver

Brent McIntosh
Faculty emeritus
North Island College

Terri Bateman
Distributed Learning Facilitator
North Island College

Robyn Starkey
Doctoral Exams Coordinator
University of British Columbia

Dr. Marni Westerman
Sociology
Douglas College,
New Westminster, BC, Canada

Daphne Palmeter
Student
University of British Columbia

Vivian Forssman

Ernesto Peña
Adjunct Professor
Master of Educational Technology
UBC

Dua Naqvi
Student
University of British Columbia

Aneesh Bulusu
Student
University of British Columbia

Junsong Zhang
Instructional Design

Justice Institute of British Columbia

Don Gorges
Toronto Ontario

Kane Murdoch,
Senior Adviser, Student Integrity,
UNSW Sydney

Posted in Academia · Tagged in solidarity

Published by Brenna

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Prev

On Not Being a Thought Leader

178 Replies to "In Defence of Ian Linkletter"

Arley Cruthers
September 3, 2020 at 4:50 am

This lawsuit is chilling. Definitely add my name to future versions of the letter.

Arley Cruthers

Instructor – Applied Communications

Kwantlen Polytechnic University

REPLY

Kira Tomsons

September 3, 2020 at 5:37 am

Please add me to the signatories! This is so important.

Kira Tomsons

Faculty, Philosophy and Humanities

Douglas College

REPLY

Ingrid Marais

September 4, 2020 at 5:17 pm

Please add me as a signatory Dr IE Marais,

Department of Anthropology and Archaeology,

University of South Africa

REPLY
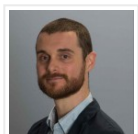
Phillip Dawson

September 3, 2020 at 5:42 am

Remote proctoring is sold to us on the logic that scrutiny is good. This lawsuit increases the asymmetry in that scrutiny: we can monitor you, but you can't monitor us.

Please add my name:

Phillip Dawson

Associate Professor

Centre for Research in Assessment and Digital Learning (CRADLE)

Deakin University, Melbourne, Australia

REPLY

Corey Sparks
September 3, 2020 at 5:52 am

Please add my name:

Corey Sparks

Assistant Professor

Department of English

California State University, Chico

REPLY

Colin Madland
September 3, 2020 at 6:02 am

This lawsuit is truly chilling. Please add my name in support of Ian and his critical voice.

Colin Madland

Manager, Online Learning, TWU

PhD student in Educational Technology, UVic

REPLY

Mia Zamora
September 3, 2020 at 11:45 am

Please add my name in support of Ian Linkletter in light of this outrageous lawsuit.

.

Mia Zamora

Associate Professor, Director of MA in English, Writing Studies

Kean University

REPLY

Aidan Mundle
September 3, 2020 at 2:30 pm

Please add my name:

Aidan Mundle

Student, University of British Columbia.

REPLY

Alan Levine
September 3, 2020 at 6:26 am

I gladly join this group in standing up for and with Ian Linkletter.

Alan Levine

Independent Education Technology Consultant

REPLY

Irwin DeVries
September 3, 2020 at 6:55 am

I fully support Ian's work in bringing to light Important concerns about surveillance technology.

REPLY

Kate Bowles
September 3, 2020 at 7:29 am

Co-sign, with feeling. The scope of the learning technologist includes investigating software design assumptions, monitoring implementation practices, and advocating for the interests of students and educators in raising issues that are of concern. Ian is doing his job.

Kate Bowles

Associate Dean International and former Head of Education Design

University of Wollongong, Australia

REPLY

Jon Fulton
September 3, 2020 at 7:30 am

I definitely stand behind Ian

REPLY

Maha Bali
September 3, 2020 at 7:49 am

This is chilling. I would like to stand by Ian and support him every way I can. Is there a straightforward way for folks to indicate interest in signing?

REPLY

Mira
September 3, 2020 at 8:01 am

Please add my name too – Mira Vogel, Senior Teaching Fellow, King's College London

REPLY
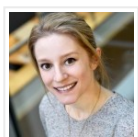
Jo Stroud
September 3, 2020 at 8:40 am

Happy to put my name to this too. Applying critical perspectives to the tools we use with our students is part of our responsibility to them.

Joanna Stroud

Head of Online Learning

University College London
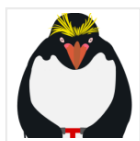
REPLY

Pat
September 3, 2020 at 9:33 am

Put me down

Pat Lockley

REPLY

Phil Barker
September 3, 2020 at 9:48 am

I fully support Ian and this letter. Thank you all for your work.

Phil Barker, Independent Learning Technology Consultant.

REPLY

Chris Miciek
September 3, 2020 at 10:11 am

Sets a horrible precedent and environment for students' future work and their comfort with employer surveillance, too.

Chris Miciek

Director, Career Development Center

Thomas Jefferson University

REPLY

Lee Skallerup Bessette
September 3, 2020 at 10:12 am

Please add my name.

Lee Skallerup Bessette

Learning Design Specialist

Georgetown University

REPLY
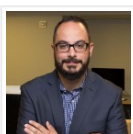
Luke Waltzer
September 3, 2020 at 11:07 am

This harassment is unacceptable. Ian Linkletter, you are not alone.

Luke Waltzer

Director, Teaching and Learning Center

The Graduate Center, CUNY

REPLY

Charles Logan
September 3, 2020 at 11:29 am

I'm grateful for Ian's work. Thank you, Brenna, for putting together this letter.

Charles Logan

PhD Student in Learning Sciences

Northwestern University

REPLY

Dorothea Salo
September 3, 2020 at 11:37 am

Please add my name.

Dorothea Salo

Distinguished Faculty Associate

Information School

University of Wisconsin-Madison

REPLY

Rob Proulx
September 3, 2020 at 11:53 am

I'd like to add my name in support of Ian:

Rob Proulx, PhD

Lecturer

University of Minnesota Crookston

REPLY

Chad Flinn
September 3, 2020 at 12:29 pm

This is scary. I stand in solidarity with Ian. Please add my name.

Chad Flinn

Instructor

BCIT

REPLY

peggy french
September 3, 2020 at 12:33 pm

No words (well a few swear ones for Proctorio) – only admiration for Ian.

Peggy French

Open Education Librarian | Curriculum Designer

Mohawk College of Applied Arts & Technology

Hamilton ON

REPLY

Terry Greene
September 3, 2020 at 12:36 pm

Add my name please

Terry Greene

ELearning Designer

Trent University Online

REPLY

Margy MacMillan
September 3, 2020 at 12:52 pm

Please add my name to the list n support of Ian's vital work

Margy MacMillan

Professor Emerita

Mount Royal University

REPLY

Matt Crosslin
September 3, 2020 at 1:07 pm

You can add my name as well:

Matt Crosslin, PhD

Instructional Designer

Part-Time Faculty, UTRGV

REPLY

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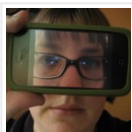
tracy stuntz

September 3, 2020 at 1:19 pm

Thankful to add my name in support.

Tracy Stuntz, EdD

Instructional designer

Clovis Community College

REPLY
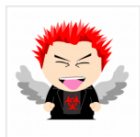
Apostolos Koutropoulos

September 3, 2020 at 1:46 pm

Whatever your stance may be on proctoring (remote or otherwise), this is not a way to have a mature conversation and debate about it (I am looking at you, Proctor.io). Shedding light on how something works is important for our professional practice. SLAPPing someone because they shine a light on how things work is tantamount to bullying and silencing people with legitimate questions and concerns. I support Ian Linkletter.

REPLY

Sarah Elaine Eaton

September 3, 2020 at 1:52 pm

Please add my name:

Sarah Elaine Eaton, PhD

Associate Professor and Educational Leader in Residence, Academic Integrity

University of Calgary

REPLY

Leo Havemann
September 3, 2020 at 2:09 pm

I would like to add my signature and my disappointment. Any company seeking to provide services to educational institutions and our students should not forget these are not simply 'customers' in some kind of generic sense – in searching for vendors we must seek those which can assure us that they would only act ethically and responsibly on our behalf. The idea that any vendor would take legal action against an individual education worker rather than respond transparently to criticism beggars belief, and should give pause to any institutions who have already engaged in a relationship with them.

Leo Havemann

Digital Education Advisor

University College London

REPLY

Josh Seeland
September 3, 2020 at 2:14 pm

Josh Seeland

Academic Integrity & Copyright Officer

ACC

Brandon, Canada

REPLY

Parm Gill
September 3, 2020 at 2:23 pm

Please add my name to show support for Ian Linkletter and his important work.

Parm Gill, Learning Designer

REPLY

Tim Fawns
September 3, 2020 at 2:28 pm

Thank you for this letter. I agree, we need to protect those who protect students – please add my name.

REPLY

Xinli Wang
September 3, 2020 at 2:40 pm

Xinli Wang, Ph.D

Instructor

University of Manitoba

REPLY

Mahrya Burnett
September 3, 2020 at 2:46 pm

I agree with everything here. Consider this my signature in support:

Mahrya Burnett

Scholarly Communications Librarian

University of Iowa

REPLY
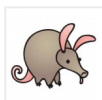
Mel Guille

September 3, 2020 at 2:56 pm

Everyone who works in edtech should be paying attention to these issues — we have responsibily to serve not just clients and instituions, but also their learners. Please add my name to this letter.

Mel Guille

Courseware Technical Writer

Onlea Corporation

REPLY

Jim Groom

September 3, 2020 at 2:50 pm

Please add my name for support, and would be very interested in contributing towards and canvassing for legal aide if Proctorio is foolish enough to go through with this insanity.

REPLY
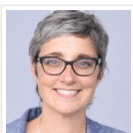
Giulia Forsythe

September 3, 2020 at 3:00 pm

Co-signed

REPLY

Shea Swauger

September 3, 2020 at 3:03 pm

Shea Swauger

Researcher Support Department Head

University of Colorado Denver

Very Pissed Off

REPLY

Heidi Tiedemann Darroch
September 3, 2020 at 3:05 pm

Thanks for this effort. It's an outrageous attempt to quell critical analysis, which should be the foremost task of everyone in education.

REPLY

Timothy McGee
September 3, 2020 at 3:11 pm

Yes.

Timothy McGee

Chaplain and Assistant Professor of Religion

Illinois College

REPLY

Logan Murray-Boehler
September 3, 2020 at 3:11 pm

Add me

Logan Murray, Ed.D

Analyst

California Community Colleges

REPLY
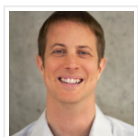
Paul Hibbitts

September 3, 2020 at 3:11 pm

Please add my signature and support of Ian:

Paul Hibbitts

Designer and Educator

Vancouver, BC

Canada

REPLY

Adam Beauchamp
September 3, 2020 at 3:29 pm

Co-signed:

Adam Beauchamp

Assistant University Librarian

Florida State University

REPLY

Mary Burgess
September 3, 2020 at 3:35 pm

Adding my name to this list in support.

Mary Burgess

Executive Director

BCcampus

REPLY
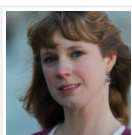
Erin Beattie
September 3, 2020 at 3:38 pm

In full and complete support of Ian.

Erin Beattie

Manager, Marketing and Communications

BCcampus

Victoria, B.C.

Canada

REPLY

Arianna Cheveldave
September 3, 2020 at 3:44 pm

Please add my name in support of Ian Linkletter.

Arianna Cheveldave

Coordinator, Open Education

BCcampus

REPLY

---

denise goudy
September 3, 2020 at 3:47 pm

Please add my name to the list of people who in full support of Ian.

Denise Goudy

Director, Collaborative Projects

BCcampus

Victoria, BC

Canada

REPLY

Amanda Coolidge
September 3, 2020 at 3:55 pm

In full support.

Amanda Coolidge

Director, Open Education

BCcampus

REPLY

David Carter
September 3, 2020 at 3:57 pm

Please add my name in support of Ian.

David Carter

Assistant Professor

University of Utah

REPLY

Michelle Harrison
September 3, 2020 at 4:00 pm

Please add my name and support for Ian and his very important and critical voice supporting students.

Michelle Harrison

Senior Instructional Designer, Open Learning

Thompson Rivers University, Kamloops, BC

REPLY

Stephen Doubt
September 3, 2020 at 4:01 pm

Ian Linkletter is one the kindest most ethically balanced peoples I have ever met. Please add my name.

Stephen Doubt

Instructional Designer

Thompson Rivers University

Kamloops, BC

REPLY

Ken Monroe

September 3, 2020 at 4:02 pm

In solidarity with Ian. Happy to contribute to the defense fund if necessary. We stand together!

Ken Monroe

Instructional Designer

TRU – Open Learning

REPLY

Ken Monroe

September 3, 2020 at 4:05 pm

In solidarity with Ian. Happy to contribute to the defense fund if necessary. We stand together!

Ken Monroe

Instructional Designer

Thompson Rivers University – Open Learning

REPLY

Karolina Karas

September 3, 2020 at 4:09 pm

In full and complete support of Ian.

Karolina Karas

Strategist, Marketing and Communications

BCcampus

Victoria, B.C.

Canada

REPLY
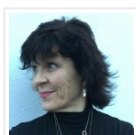
Catherine Cronin
September 3, 2020 at 4:11 pm

This is chilling. Please add my name.

Making informed choices about edtech includes engaging in critical scholarship that explores the values embedded in educational technologies and the practices and pedagogies that such technologies enable and encourage. This is *part of our work* as digital education professionals in higher education. Please add my name in support of Ian. Many thanks for setting this up, Brenna.

REPLY

Cristina Colquhoun
September 3, 2020 at 4:17 pm

Cristina Colquhoun

Instructional Designer

Oklahoma State University

REPLY

Jördis Weilandt
September 3, 2020 at 4:21 pm

I support Ian Linkletter.

Jördis Weilandt

Instructor and Teaching Development Facilitator

University of Lethbridge/ AB

REPLY

Erin Reid
September 3, 2020 at 4:22 pm

Please add my name in solidarity.

Erin Reid

PhD Candidate

Faculty of Education, McGill University

REPLY
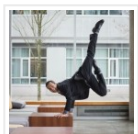
Rajiv Jhangiani
September 3, 2020 at 4:22 pm

This vexatious suit looks like nothing short of a tactic of intimidation. It is increasingly apparent that this company (which earlier posted student chat logs on Reddit before apologizing) does not understand how privacy works (e.g., the difference between an unlisted and a private video on YouTube) and are certainly not open to any critical discussion of their technology. Given that the videos in question could have been easily shared by any of the universities currently using this software (and their employees), targeting Ian here comes across as pure retribution for his public critiques. This is unethical, reprehensible behaviour.

Rajiv Jhangiani

Acting Vice Provost, Teaching & Learning

Kwantlen Polytechnic University

REPLY

Caley
September 3, 2020 at 4:27 pm

I have learned so much from the both of you about ethical online teaching. Please add my
name in support :

Caley Ehnes, PhD

Instructor

College of the Rockies

Cranbrook, BC

REPLY

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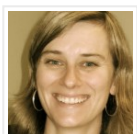
tannis morgan
September 3, 2020 at 4:30 pm

Please add my name in support of Ian, and let's continue to be the critical check and
balance that is so needed in the Ed tech space.

Tannis Morgan

Advisor, BCcampus
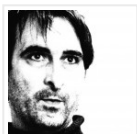
REPLY

Jon Beasley-Murray
September 3, 2020 at 4:40 pm

Please add my name.

Jon Beasley-Murray

Associate Professor

University of British Columbia

REPLY

Leeann Waddington

In full support

Leeann Waddington

Manager, Learning Technology and Educational Media

Kwantlen Polytechnic University

REPLY

Lisa Gedak

September 3, 2020 at 4:41 pm

Please add my name in support of Ian Linkletter.

In solidarity,

Lisa Gedak

Teaching and Learning with Technologies Strategist

Kwantlen Polytechnic University (KPU)

REPLY

George Veletsianos

September 3, 2020 at 4:42 pm

Please add my name and support as well:

George Veletsianos, PhD

Professor

Canada Research Chair in Innovative Learning and Technology

Royal Roads University

Victoria, BC

REPLY

Robin Leung
September 3, 2020 at 4:44 pm

IN solidarity with Ian.

Robin Leung

Educational Media Strategist

Kwantlen Polytechnic University

REPLY

Shawna M. Brandle
September 3, 2020 at 4:53 pm

Please add my name, and thanks for coordinating this.

Shawna M. Brandle

Associate Professor, Kingsborough Community College

REPLY

Brenda M. Stoesz
September 3, 2020 at 5:01 pm

Please add my name:

Brenda M. Stoesz, PhD

Faculty Specialist (Academic Integrity Initiative)

The Centre for the Advancement of Teaching and Learning, University of Manitoba

Winnipeg, MB, Canada

REPLY

Theresa Southam

September 3, 2020 at 5:03 pm

I fully support Ian.

Theresa Southam, Chair

Teaching and Learning Institute

Selkirk College

REPLY
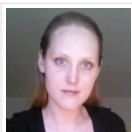
Karen Meijer-Kline

September 3, 2020 at 5:03 pm

Please add my name in support as well.

Karen Meijer-Kline

Scholarly Communications Librarian

Kwantlen Polytechnic University

REPLY

Troy Welch

September 3, 2020 at 5:05 pm

Please add my name to the support letter. Ian's commitment and bravery is inspiring.

REPLY

David Golumbia

September 3, 2020 at 5:46 pm

please add my name:

David Golumbia

Assoc Prof, Digital Studies

Virginia Commonwealth University

REPLY
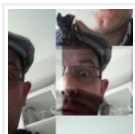
Shawn Graham
September 3, 2020 at 6:01 pm

Please add my name.

Shawn Graham,

Full Professor, Digital Humanities

Dept of History

Carleton University

REPLY

Jason Toal
September 3, 2020 at 6:21 pm

Please add my name

Jason Toal

Interaction Designer,

Centre for Educational Excellence

SFU

REPLY

Mandy Henk
September 3, 2020 at 6:58 pm

Please add my name

Mandy Henk

CEO, Tohatoha Aotearoa Commons

REPLY

Donna Lanclos
September 3, 2020 at 7:03 pm

Yes, please add my name in support

Donna Lanclos, PhD

Consulting Anthropologist

REPLY

Erika Smith
September 3, 2020 at 7:58 pm

Thank you for this, Brenna and all. Please add my name:

Erika Smith, PhD

Associate Professor & Faculty Development Consultant

Mount Royal University

REPLY

Paul Sopcak
September 3, 2020 at 8:00 pm

Please add my name in support:

Paul Sopcak, Ph.D.

Coordinator, Student Conduct, Community

Standards and Values &

Instructor, Humanities Department

MacEwan University, Edmonton, Canada

REPLY

Ross McKerlich
September 3, 2020 at 8:30 pm

I support Ian. Please add my name.

Ross McKerlich

Open Education Advisor

BCcampus
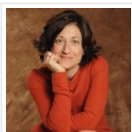
REPLY

Robin DeRosa
September 3, 2020 at 8:37 pm

Please add me.

REPLY
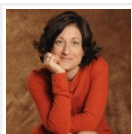
Robin DeRosa
September 3, 2020 at 8:38 pm

In full support.

Dr. Robin DeRosa, Director

Open Learning & Teaching Collaborative

Plymouth State University

REPLY

Terence Linkletter, Emeritus Senior Lecturer in IT, Central Washington University
September 3, 2020 at 8:43 pm

Please add my name in support of Ian Linkletter. I have known Ian his entire life, and admired both his wisdom in the nuances of right and wrong and his persistence in supporting others who may have been wronged. I have also worked for software vendors as a quality assurance manager. One of the most important sources of information on how to

improve a given product was the user community, whose insights I cherished. Exactly the kind of improvement feedback Ian has now been providing is worth its weight in dollar bills, and I am surprised that in this case the vendor prefers not to have accepted the feedback.

REPLY

Duane Seibel
September 3, 2020 at 9:45 pm

In full support and with gratitude acknowledge Ian's ongoing efforts to speak out and support our learners.

REPLY

Tim Clarke
September 4, 2020 at 12:37 am

I support Ian's efforts and value his professionalism and critical expertise.

Tim Clarke, Instructional Designer, Muhlenberg College, Pennsylvania

REPLY

Maureen Glynn
September 3, 2020 at 9:53 pm

Please add my name in support of Ian.

Maureen Glynn

Senior eLearning Designer

Trent Online, Trent University

REPLY
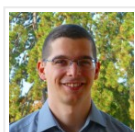
Paul-Olivier Dehaye

September 3, 2020 at 10:00 pm

The functionalities of such tools should be transparent to students and teachers, so they
can make informed choices. Please add my name in support.

REPLY

Greg Rodrigo
September 3, 2020 at 10:02 pm

In full support of Ian…

Greg Rodrigo

Faculty Developer

Georgian College

REPLY

Anshul Kulkarni
September 5, 2020 at 10:29 pm

I would like to sign in favout of Ian Linkletter.

Anshul Kulkarni

Student

Faculty of Arts

University of British Columbia, Vancouver

REPLY

Liz Morrish
September 3, 2020 at 10:23 pm

Please add my name to the petition in support of Ian Linkketter.

REPLY

Tracy Roberts
September 3, 2020 at 11:34 pm

Signing in support of Ian and his work...

Tracy Roberts

Director, Learning & Teaching

BCcampus

REPLY

Ika Willis
September 4, 2020 at 12:48 am

Ika Willis

Associate Dean, Education

Faculty of the Arts, Social Science and Humanities

University of Wollongong, Australia

REPLY

Brandon Carson
September 4, 2020 at 1:14 am

Please add my name in support of Ian Linkletter.

Brandon Carson

Learning Technologist Specialist and Part-time Professor

Durham College

REPLY

Carolyn Ives
September 4, 2020 at 2:28 am

I support Ian. Please add my name.

REPLY

Laura MacKay
September 4, 2020 at 2:42 am

In support of Ian and all those involved in post-secondary to have critical discussions about the tools and companies that impact student learning and student privacy.

Laura MacKay

Director, Centre of Teaching Excellence

Capilano University

REPLY

Brian Lamb
September 4, 2020 at 4:08 am

Brian Lamb

Director, Learning Technology & Innovation

Thompson Rivers University

REPLY

Helen Lee
September 4, 2020 at 4:10 am

Please add my name:

Helen Lee

Acting Program Director, Centre for Teaching, Learning & Innovation

Justice Institute of British Columbia

REPLY

Julia Burnham

September 4, 2020 at 4:13 am

Please add my name:

Julia Burnham

Senator and MA Student in Educational Studies

UBC Vancouver

REPLY
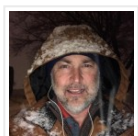
Dr Doug Reid

September 4, 2020 at 4:56 am

Please add my name as well.

REPLY

Stephanie Tate

September 4, 2020 at 5:58 am

Please add my name in support of Ian.

Stephanie Tate

Learning Strategist, Academic Integrity

MEd Student

Thompson Rivers University

REPLY

Helen Beetham

September 4, 2020 at 6:31 am

Please add my signature to support Ian and everyone who makes valid criticisms of tech companies and their products. Respect to those UBC students who are supporting Ian, to the extent of paying to get the court filing against him and making it public.

Helen Beetham

Researcher, University of Wolverhampton UK

REPLY

Mary Hanlon

September 4, 2020 at 7:02 am

Please add my name for support!!

REPLY

Conor Galvin

September 4, 2020 at 8:34 am

Fully support this.

REPLY

Martin Weller

September 4, 2020 at 8:40 am

Please add my name in support of Ian, and against companies that are antithetical to the values of higher education such as Proctorio.

Prof Martin Weller

UK Open University

REPLY

Joyce S Kim
September 4, 2020 at 9:11 am

Bravo to Ian for his dedication to student privacy and ethical use of learning technology. Please add my name in solidarity.

Joyce Kim, Master of Educational Technology, Learning Designer & Curriculum Leader.

REPLY
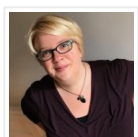
Jen Ross
September 4, 2020 at 10:20 am

Please add my name – Dr. Jen Ross, co-director for Centre for Research in Digital Education, University of Edinburgh.

REPLY

Robert Gray
September 4, 2020 at 10:43 am

Please add my name

Robert Gray

Contract Lecturer, Retired

Carleton University / University of New Brunswick

REPLY

Joanne Kehoe
September 4, 2020 at 11:20 am

Thank you for this. Please add my name in full support of Ian.

Joanne Kehoe

Lead Educational Developer

McMaster University

REPLY

Christine Dewar

September 4, 2020 at 12:01 pm

Please add my name:

Christine Dewar

Performing and Fine Arts

Douglas College

REPLY

Wendy Hulko, Associate Professor, Social Work & Human Service, Thompson Rivers University

September 4, 2020 at 2:46 pm

Thank you for making us aware of this Brenna and writing in support of Linkletter's work on surveillance technologies and applying an ethic of care to students.

REPLY

Gabriel Delney

September 4, 2020 at 3:04 pm

Take down Proctorio.

Gabriel Delaney

Bachelor's of Fine Arts

UBCO ALMUNI

REPLY

Steven Weidner
September 4, 2020 at 3:55 pm

We considered remote proctoring when we went remote. We decided to focus on reinforcing professional and ethical practices instead. Guess what? We've seen no noticeable increase in cheating. Please add my name:

Steven Weidner

Senior Instructional Technologist

New York Chiropractic College

REPLY

Tobias Steiner
September 4, 2020 at 4:17 pm

Thanks so much for this! Please add my name to the list, in full support of Ian's work:

Tobias Steiner

Community-led Open Publication Infrastructures for Monographs (COPIM)

Centre for Postdigital Cultures

Coventry University

REPLY

Jennifer Hardwick
September 4, 2020 at 4:21 pm

Please add me as well

Jennifer Hardwick

Department of English

Kwantlen Polytechnic University

REPLY

Elli England

September 4, 2020 at 4:28 pm

Please add my name in support:

Elli England

Faculty, English Department

Fullerton College

REPLY
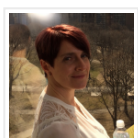
Sharon Flynn

September 4, 2020 at 4:32 pm

Add my name:

Sharon Flynn

Enhancing Digital Teaching & Learning

Irish Universities Association

REPLY

Dennis Yip

September 4, 2020 at 4:37 pm

In full support of the work Ian does.

Please add my name:

Dennis Yip

Justice Institute of British Columbia

REPLY

Sun-ha
September 4, 2020 at 7:21 pm

Please add me, too – and thank you for this.

Sun-ha Hong

Assistant Professor

School of Communication

Simon Fraser University

REPLY

William Chen
September 4, 2020 at 9:02 pm

Please add my name:

William Chen

Student at the University of British Columbia (Political Science)

REPLY

Duncan McHugh
September 4, 2020 at 10:09 pm

Ian is a staunch advocate for students, and we here at UBC (and in the ed tech community) are lucky to have him. Please add my name in support.

Duncan McHugh

Digital & Instructional Media Producer

UBC Faculty of Land and Food Systems

REPLY

Julia M Wright
September 4, 2020 at 10:39 pm

Please add me too—critique and transparency are essential to the academic mission. Thank you for writing this and organizing on our collective behalf.

Julia M Wright, George Munro Chair in English Literature & Rhetoric, Dalhousie University

REPLY

Stoo Sepp
September 5, 2020 at 3:22 am

I have worked closely with Ian at UBC. His priorities have always been the protection of student privacy while ensuring they have the best educational experience possible.

Add me to the list.

Stoo Sepp, PhD

Independent Educational Technology researcher and former UBC Staff

REPLY

Doug Holton
September 5, 2020 at 7:21 am

And this is just one example of a pattern of behavior by Proctorio that I find concerning.

Doug Holton

Director of Teaching and Learning

Florida Polytechnic University

REPLY

Gerol Petruzella
September 5, 2020 at 10:38 am

In solidarity with Ian.

Gerol C. Petruzella, Ph.D.

Associate Director, Academic Technology

Massachusetts College of Liberal Arts

REPLY

Kieran Mathieson
September 5, 2020 at 2:14 pm

Please add:

Kieran Mathieson

Associate Professor

Oakland University

REPLY

Kieran Forde
September 5, 2020 at 3:26 pm

Ian has my respect, admiration, and full support. Please add my name to the list:

Kieran Forde

PhD student

University of British Columbia

REPLY

Miles Schaffrick
September 5, 2020 at 4:16 pm

Please add my name in solidarity.

Miles Schaffrick

Student, Department of Political Science, University of British Columbia

REPLY

James

September 5, 2020 at 5:11 pm

Please add my name for support.

James Binks

Alumni, University of British Columbia

REPLY

Ranil Prasad

September 5, 2020 at 6:08 pm

Proctorio using a SLAPP lawsuit to silence Ian is deplorable. Happy to sign the letter.

Ranil Prasad

UBC B.A Student (Political Science)

REPLY

Bryce Wilson

September 5, 2020 at 6:33 pm

Hi!

I would also like to sign.

Bryce Wilson

Student,

University of British Columbia

REPLY

Dominique St-Arnaud

September 5, 2020 at 7:16 pm

Please add:

Dominique St-Arnaud

Student, University of British Columbia
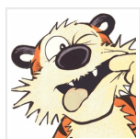
REPLY

Rik Blok
September 5, 2020 at 7:41 pm

Please add my name.

Rik Blok, PhD

Sessional Lecturer

Computer Science, UBC

REPLY

Suhani Jayatilake
September 5, 2020 at 8:00 pm

Please add my signature!

Suhani Jayatilake

UBC Alumna

REPLY

Benjamin Cheung
September 5, 2020 at 8:02 pm

Benjamin Cheung

Lecturer, Department of Psychology

University of British Columbia

REPLY

Zara Zaman

September 5, 2020 at 8:31 pm

I would like to sign.

Student of University of Toronto

REPLY

Manal Nadeem

September 5, 2020 at 8:33 pm

Manal Nadeem

Student,

University of Toronto

REPLY

Alisar Abdel Rahman

September 5, 2020 at 8:33 pm

Hello, I would also like to add my name in support.

Alisar Abdel Rahman,

Student – University of Toronto Mississauga

REPLY

Nada Al-Towaity

September 5, 2020 at 8:35 pm

Nada Al-Towaity

computer science, mathematics, and stats

University of Toronto Mississauga

REPLY

Kota Chang
September 5, 2020 at 8:51 pm

Please add my name

Kota Chang

Student,

University of British Columbia

REPLY

Dvir Hilu
September 5, 2020 at 9:00 pm

Happy to sign the letter!

Dvir Hilu

Student

University of British Columbia

REPLY

Isak Boyd
September 5, 2020 at 9:31 pm

Pease add my name to the list!

Isak Boyd

Student

University of British Columbia

REPLY

Isha Mehta
September 5, 2020 at 9:35 pm

Please add my name.

Isha Mehta.

Student, University of British Columbia.

REPLY

Natasha Hannon
September 5, 2020 at 9:57 pm

Please add my name.

REPLY

Melissa Jakubec
September 5, 2020 at 10:25 pm

Please add me:

Melissa Jakubec

Principal Instructional Designer

Thompson Rivers University

REPLY

Brent McIntosh
September 6, 2020 at 1:48 am

Please add my name in support.

Brent McIntosh

Faculty emeritus

North Island College
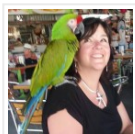
REPLY

Terri Bateman

September 6, 2020 at 1:54 am

I would like to be added to this list too please.

Terri Bateman

Distributed Learning Facilitator

North Island College

REPLY

Robyn Starkey

September 6, 2020 at 3:15 am

I sincerely value you these efforts and appreciate Ian as a colleague.

Robyn Starkey

Doctoral Exams Coordinator

University of British Columbia

REPLY

Marni Westerman

September 6, 2020 at 5:52 am

Please add my name to this letter.

Dr. Marni Westerman

Sociology

Douglas College,

New Westminster, BC, Canada

REPLY
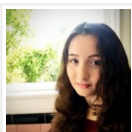
Daphne Palmeter

September 6, 2020 at 6:19 am

Please add my name in support of Ian!

Daphne Palmeter

Student

University of British Columbia

REPLY

Vivian Forssman

September 6, 2020 at 9:09 am

Standing with and for Ian

REPLY

Ernesto Peña

September 6, 2020 at 9:54 pm

Please add me as well:

Ernesto Peña

Adjunct Professor

Master of Educational Technology

UBC

REPLY

Dua

September 6, 2020 at 10:47 pm

Please add my name.

Dua Naqvi

Student

University of British Columbia

REPLY

Aneesh Bulusu

September 7, 2020 at 4:29 am

Please add my name.

Aneesh Bulusu

Student

University of British Columbia

REPLY

Junsong Zhang

September 7, 2020 at 5:03 am

Exactly why we need more open education resources and applications. This lawsuit is ridiculous.

Add my name pls

Junsong Zhang

Instructional Design

Justice Institute of British Columbia

REPLY

Don Gorges

September 7, 2020 at 6:53 am

I support lawful, ethical critique of surveillance technologies.

Don Gorges

Toronto Ontario

REPLY

Kane
September 7, 2020 at 7:41 am

I'm aware of the irony, given the nature of my work, but telling students they must personally submit to the Panopticon goes against every good I've ever believed education stands for.

Please add my name:

Kane Murdoch,

Senior Adviser, Student Integrity,

UNSW Sydney.

REPLY

Alexandra Gil
September 8, 2020 at 5:01 am

You can add me as well

Alexandra Gil

Student

University of British Columbia

REPLY

Kara Deane
September 8, 2020 at 5:58 pm

Please add my name:

Kara Deane

BSc Student

University of British Columbia

Thank you.

REPLY

Francesca Helm
September 8, 2020 at 10:18 pm

Please add my name

Francesca Helm

Researcher, University of Padova,

Italy

REPLY

Michael Marker
September 9, 2020 at 1:35 am

It is certainly no coincidence that one of the greatest allies for Indigenous faculty and students in ETS and in all realms of IT at UBC is Ian who is now being attacked by the same forces of technocratic colonization that threaten Indigenous people, lands, and the entirety of planetary survival. Ian Linkletter is my friend, my colleague for over a decade. He has helped me to think through difficult issues of Indigenous epistemologies and how best to support our students as we developed online courses and access for remote and impoverished Indigenous communities. As an Indigenous professor, I rely on culturally thoughtful and engaged allies like Ian to enact reconciliation at UBC. It is a disgusting outrage that he should be persecuted by corporate corruption, power, and mostly… greed! I stand in solidarity with all who support Ian.

REPLY

Gerald Tembrevilla
September 9, 2020 at 2:30 am

In full support and solidarity with Ian. You can always count on us, Ian.

Please count me in for this cause.

Gerald Tembrevilla, PhD

Research Specialist

Institute for the Scholarship of Teaching and Learning

Center for Teaching, Learning and Technology &

Department of Curriculum and Pedagogy

Faculty of Education

University of British Columbia – Vancouver Campus

REPLY

Grant Marshall
September 9, 2020 at 2:47 am

Hey Brenna,

You can add me

Grant Marshall

Former EST Coop

TRU OL

Bachelors of Computiy Science

Say hi to Brian!

REPLY

Stephen Petrina
September 9, 2020 at 2:55 am

Add me as well:

Stephen Petrina, Professor

University of British Columbia

REPLY

LeAnne Petherick
September 9, 2020 at 4:36 am

I fully support Ian. I want to thank him for raising our awareness about the trauma imposed by such technologies and his concern for students and online learning. He is a valuable member of UBC. Please add my name.

REPLY

Trent Gill
September 9, 2020 at 5:37 am

Ian deserves credit and praise for his critical work in this space. His work is recognized and his resistance deserves support. Ian puts students first.

Trent Gill

Academic Advisor

Brandon University

REPLY

Florence Daddey
September 9, 2020 at 6:00 am

Please add my name to the list. I fully support Ian's work.

Business Management Instructor

Douglas College

New Westminster

REPLY

Mari Pighini - via email
September 9, 2020 at 6:02 am

I stand in full support with Ian Linkletter, an esteemed colleague and friend, and an individual of the highest ethical and professional integrity. The recipient of UBC's 2020 Staff Excellence Award at the Faculty of Education, Ian is a role model for faculty and students alike. I trust that this ossue will be clarified favourably for Mr Linkletter very soon.

REPLY
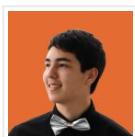
Tiger Oakes
September 9, 2020 at 5:26 pm

We need transparency and to protect everyone's privacy now more than ever.

Tiger Oakes, Student

University of British Columbia

REPLY

Barish Golland
September 10, 2020 at 6:26 am

I've known Ian for many users with our work in Learning Technology Ecosystems and respect his passion and advocacy for technology enabled student learning. Definitely would vouch for him!

Barish Golland

Training Lead, IRP

University of British Columbia

REPLY

Cavan Slade

September 10, 2020 at 5:58 pm

This is vile. I am in complete support of Linkletter's efforts. put my name on this list

Cavan Slade

Student,

University of British Columbia

REPLY

Leah Macfadyen

September 14, 2020 at 11:40 pm

And me.

Leah Macfadyen

Associate Director, Master of Educational Technology Program

Faculty of Education

The University of British Columbia

REPLY

Melanie Meyers

September 16, 2020 at 7:51 pm

Please add me:

Melanie Meyers,

Project Manager, Open Education

BCcampus

REPLY

Iris Berger (via email)

September 21, 2020 at 5:15 pm

(via Email) Iris Berger (EdD)

Assistant Professor of Teaching

Department of Language and Literacy,

Coordinator ECE Programs,

Faculty of Education,

University of British Columbia

REPLY

Taylor
September 21, 2020 at 6:12 pm

Please add my name:

Taylor K. Long

Senior Communications Specialist

Dartmouth College

REPLY

Georgia Yee
September 28, 2020 at 9:31 am

Please add my name:

Georgia Yee

Vice President of Academic and University Affairs

Alma Mater Society of University of British Columbia

BSc Biology

REPLY

ronald mo
September 30, 2020 at 4:47 am

Please add me

Ronald Mo

Chemical and Biological Engineering

University of British Columbia

REPLY

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On Not Being a Thought Leader

I can't go on, I'll go on (with apologies to Samuel Beckett).

I just built a Twitter archive by hand. Learn from my mistakes.

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Students Are Pushing Back Against Proctoring Surveillance Apps

This is Exhibit W referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

_____
A Commissioner for taking Affidavits for British Columbia

Special thanks to legal intern Tracy Zhang, who was lead author of this post.

Privacy groups aren't the only ones raising the alarm about the dangers of invasive proctoring apps. Through dozens of petitions across the country, and the globe, students too are pushing school administrators and teachers to consider the risks these apps create.

Schools must take note of this level of organized activism.

Students at the University of Texas at Dallas are petitioning the school to stop using the proctoring app Honorlock. The petition has over 6,300 signatures, notes that Honorlock can collect "your face, driver's license, and network information," and calls use of Honorlock a "blatant violation of our privacy as students." Students at Florida International University are petitioning their school to stop using Honorlock as well, gathering over 7,200 signatures. They highlight the amount of data that Honorlock collects and that Honorlock is allowed to keep the information for up to a year and, in some cases, 2 years. Students at California State University Fullerton are petitioning the school to stop using Proctorio, calling it "creepy and unacceptable" that students would be filmed in their own house in order to take exams. The petition has over 4,500 signatures.

But it's not just privacy that's at stake. While almost all the petitions we've seen raise very real privacy concerns—from biometric data collection, to the often overbroad permissions these apps require over the students' devices, to the surveillance of students' personal environments—these petitions make clear that proctoring apps also raise concerns about security, equity and accessibility, cost, increased stress, and bias in the technology.

A petition by the students at Washington State University, which has over 1,700 signatures, raises concerns that ProctorU is not secure, pointing to a July 2020 data breach in which the information of 440,000 users was leaked. Students at University of Massachusetts Lowell are petitioning the school to

stop using Respondus, in particular calling out the access that its Ring-0 software has on students' devices, and noting that the software "creates massive security vulnerabilities and attack vectors, and thus cannot be tolerated on personal devices under any circumstances." The petition has over 1,000 signatures.

Students at the University of Colorado Boulder raise concerns about the accessibility of proctoring app Proctorio, saying that "the added stress of such an intrusive program may make it harder for students with testing anxiety and other factors to complete the tests." The petition has over 1,100 signatures. The Ontario Confederation of University Faculty Associations wrote a letter speaking out about proctoring technologies, noting that the need for access to high-speed internet and newer computer technologies "increase [students'] stress and anxiety levels, and leave many students behind."

In addition to privacy concerns, the petition from students at Florida International University notes that because Honorlock requires a webcam and microphone, "students with limited access to technology or a quiet testing location" are placed at a disadvantage, and that the required use of such technology "does not account for students with difficult living situations." A petition against Miami University's use of Proctorio notes that its required use "discriminates against neurodivergent students, as it tracks a student's gaze, and flags students who look away from the screen as 'suspicious.' This, too, "negatively impacts people who have ADHD-like symptoms." The petition also noted that proctoring software often had difficulty recognizing students with black or brown skin and tracking their movements. Their petition has over 400 signatures.

Students have seen success through these petitions. A petition at The City University of New York, supported by the University Student Senate and other student body groups, resulted in the decision that faculty and staff may not compel students to participate in online proctoring. After students at the University of London petitioned against the use of Proctortrack, the university decided to move away from the third-party proctoring provider.

Students have seen success through these petitions.

Below, we've listed some of the larger petitions and noted their major concerns. There are hundreds more, and regardless of the number of signatures, it's important to note that even a few concerned students, teachers, or parents can make a difference at their schools.

As remote learning continues, these petitions and other pushback from student activists, parents, and teachers will undoubtedly grow. Schools must take note of this level of organized activism. Working together, we can make the very real concerns about privacy, equity, and bias in technology important components of school policy, instead of afterthoughts.

*****

If you want to learn more about defending student privacy, EFF has several guides and blog posts that are a good place to start.

- A detailed explanation of EFF's concerns with <u>unnecessary surveillance of proctoring apps is available here</u>
- Our <u>Surveillance Self-Defense Guide to student privacy</u> covers the basics of techniques that are often used to invade privacy and track students, as well as what happens to the data that's collected, and how to protect yourself.
- Proctoring apps aren't the only privacy-invasive tools schools have implemented. Cloud-based education services and devices can also jeopardize students' privacy as they navigate the Internet—including children under the age of 13. From Chromebooks and iPads to Google Apps for Education, <u>this FAQ provides an entry-point to learn about school-issued technology</u> and the ramifications it can have for student privacy.
- Parents and guardians should also understand the risks created when schools require privacy-invasive apps, devices, and technologies. <u>Our guide for them is a great place to start</u>, with ways to take action, and includes <u>a printable FAQ</u> that can be quickly shared with other parents and brought to PTA meetings.
- All student privacy-related writing EFF does is collected on<u> our student privacy page</u>, which also includes basic information about the risks students are facing.
- In the spring of 2017, we <u>released the results of a survey</u> that we conducted in order to plumb the depths of the confusion surrounding ed tech. And as it turns out, students, parents, teachers, and even administrators have lots of concerns—and very little clarity—over how ed tech providers protect student privacy.
- COVID has forced many services online besides schools. Our <u>guide to online tools during COVID</u> explains the wide array of risks this creates, from online chat and virtual conferencing tools to healthcare apps.
- Some schools are mandating that students install <u>COVID-related technology</u> on their personal devices, but this is the wrong call. <u>In this blog post,</u> we explain why schools must remove any such mandates from student agreements or commitments, and further should pledge *not* to mandate installation of any technology, and instead should present the app to students and demonstrate that it is effective and respects their privacy.

*****

Below is a list of just some of the larger petitions against the required use of proctoring apps as of September 24, 2020. We encourage users to read the privacy policies of any website visited via these links.

- <u>Auburn University</u> students note that "proctoring software is essentially legitimized spyware."
- <u>NJIT</u> petitioners write that while students agreed to take classes online, they "**DID NOT** agree to have [their] privacy invaded."
- <u>CUNY</u> students successfully leveraged 27,000 signatures to end the "despicable overreach" of proctoring app Proctorio.
- Students at the <u>University of Texas at Dallas</u>, <u>Dallas College</u>, and <u>Texas A&M</u> called the use of Honorlock "both a blatant violation of our privacy as students and infeasible for many."
- <u>University of Tennessee Chattanooga students</u> say that "Proctorio claims to keep all information safe and doesn't store or share anything but that is simply not true. Proctorio actually keeps recordings and data on a cloud for up to 30 days after they have been collected."

- Washington State University students note that in July, "ProctorU had a data breach of 440,000 students/people's information leaked on the internet."
- In a letter to the Minister of Colleges and Universities, the Ontario Confederation of University Faculty Associates argue that "Proctortrack and similar proctoring software present significant privacy, security, and equity concerns, including the collection of sensitive personal information and the need for access to high-speed internet and newer computer technologies, These requirements put students at risk, increase their stress and anxiety levels, and leave many students behind."
- In a popular post, a self-identified student from Florida State University wrote on Reddit that "we shouldn't be forced to have a third-party company invade our privacy, and give up our personal information by installing what is in reality **glorified spyware** on our computers." An accompanying petition by students at FSU says that using Honorlock "blatantly violates privacy rights."
- CSU Fullerton students call it "creepy and unacceptable" that students would be filmed in their own house in order to take exams, and declare they **"will not accept being spied on!"**
- Miami University petitioners argue that "Proctorio discriminates against neurodivergent students, as it tracks a student's gaze, and flags students who look away from the screen as 'suspicious' too, which negatively impacts people who have ADHD-like symptoms." The petition goes on to note that "students with black or brown skin have been asked to shine more light on their faces, as the software had difficulty recognizing them or tracking their movements."
- CU Boulder students say that, with Proctorio, the "added stress of such an intrusive program may make it harder for students with testing anxiety and other factors to complete the tests."
- UW Madison students are concerned about Honorlock's "tracking of secure data whilst in software/taking an exam (cookies, browser history); Identity tracking and tracing (driver's license, date of birth, address, private personal information); Voice Tracking as well as recognition (Specifically invading on privacy of other members of my home); Facial Recognition and storage of such data."
- Florida International University students note that "Honorlock is allowed to keep [recordings of students] for up to a year, and in some cases up to 2 years." The petition also notes that "Honorlock requires a webcam and microphone. This places students with limited access to technology or a quiet testing location at a disadvantage…You are required to be in the room alone for the duration of the exam. This does not account for students with difficult living situations."
- Georgia Tech petitioners are concerned that data collected by Honorlock "could be abused, for example for facial recognition in surveillance software or to circumvent biometric safety system."
- University of Central Florida students argue that "Honorlock is not a trustworthy program and students should not be forced to sign away their privacy and rights in order to take a test."
- UMass Lowell students call out the "countless security vulnerabilities that are almost certainly hiding in the Respondus code, waiting to be exploited by malware and/or other forms of malicious software."
- University of Regina students argue that "facial recognition software and biometric scanners have been shown to uphold racial bias and cannot be trusted to accurately evaluate people of color. Eye movement and body movement is natural and unconscious, and for many neurodivergent people is completely unavoidable."

NEWS

As college resumes, students protest against invasive proctoring apps

This is Exhibit X referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

By Maya Shwayder
September 26, 2020
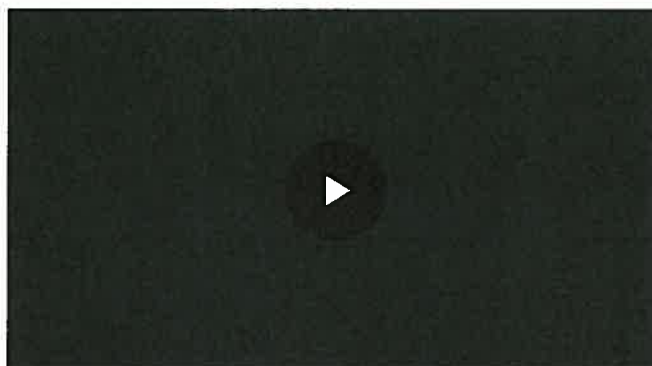
Like much student activism these days, this movement started with a post on the internet. Specifically, the Baruch College subreddit at the beginning of the school year. A student alleged that a professor was forcing them to spend $15 for a proctoring app called Proctorio, which would then lock down their computers and record them while taking a test. "If the school is concerned about us cheating, then we shouldn't have to pay more to prevent that," the student wrote.

The post caught the attention of Aharon Grama, a sophomore at Brooklyn College, one of Baruch's City University of New York (CUNY) sister schools. Grama told Digital Trends that he began chatting with other students on several CUNY-related Discord servers, and discovered that a group at Baruch had already started a petition to block the school from requiring students to download the software. Grama led the charge and, after three weeks, the petition garnered close to 28,000 signatures.

In the new world where college is almost entirely online, schools have a lot of kinks to iron out. In between figuring out access for students with disabilities, and whether kids even have steady internet access, the question of how to fairly administer tests rears its head.

Proctoring apps and education resources to monitor test takers abound, but many of these apps — under the guise of ensuring academic integrity — require an invasive amount of access to a student's computer, experts say. And what's more, many students feel as if they don't have a choice; they have to use the app, or they will run afoul of their professors and won't be able to take their midterms or finals.

Timothy Hunter
@TheTimHunter

In case you missed it, this petition is almost at 20K signatures. Calling for @CUNY to not violate student privacy in the midst of CUNYs transition to distance learning. Every CUNY Provost needs to make a commitment to ensuring the safety of our privacy.

Sign the Petition
Do Not Let CUNY Violate Student Privacy
🔗 change.org

6:01 PM · Sep 2, 2020   ⓘ

♡ 6   👤 See Timothy Hunter's other Tweets
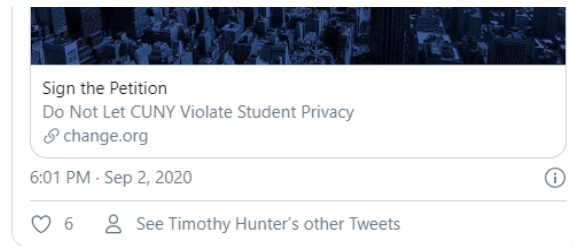
The apps, when installed, might do anything from completely lock down your computer remotely so that nothing except the test app is usable, to recording keystrokes, to monitoring your eye and body movement, to accessing the data on your computer or your web browser, wrote Lindsay Oliver and Jason Kelley of the Electronic Frontier Foundation.

"Much of this technology is effectively indistinguishable from spyware, which is malware that is commonly used to track unsuspecting users' actions on their devices and across the internet," Oliver and Kelley wrote.

"A lot of students are concerned that the administration wants to use this invasive tech to surveil them," said Caitlin Steeley George, a campaign director for Fight for the Future, which has been engaging in on-campus privacy issues, including the use of proctoring apps and the spread of facial recognition technology at colleges. "It forces access to your computers, it forces them to film their rooms, it can look at your private information and communications, and tracks their eye movements. It's a very Orwellian style of surveillance, and it's not necessary for successful test-taking."

Is it spyware?

Proctorio CEO Mike Olsen told Digital Trends that he's aware of the messy reputation proctoring apps have, from accusations of using facial recognition, to being used more widely as a surveillance tool for students. "We got into this [business] because the incumbents in the space were doing things that were violations of privacy, and things that were shady," he said. "We don't want our system to be used for bad things."

The intent, Olsen said, was to create a service that is *not* extremely invasive. With Proctorio, there's nothing to download, or any monitoring of the desktop, he said — the app is a browser extension that is inert when the student is not signed into the school's learning management system. However, when it is activated, Proctorio offers a suite of features that schools can choose to activate or not, and therein lies the rub.

Iris Wang/Unsplash

Olsen confirmed that Proctorio is contracted with CUNY through the company McGraw Hill. While the app doesn't track body movements, or browser history, Olsen said they are tracking what he called "gaze detection" — the tracking of eye movements to make sure a student isn't looking at a phone, for example — and they're also monitoring whether you're using your keyboard, although they won't record individual keyboard strokes.

Professors using Proctorio can also choose to video record their students taking the test, and may even ask students to do an "environment check," or to record the room around them. "The intent [of the environment check] was to show the desk," Olsen said. "To show that you don't have a cheat sheet. And we have documentation that shows people are not comfortable showing their rooms. We try to make it clear to institutions that this is a pandemic, and they don't need to have this aggressive stance these days."

Fear of retribution

CUNY has not responded to a request for comment. According to Grama, the school never officially responded to the petition. Instead, a few days after the petition went up, the school sent an email saying that faculty could not force any student to download the apps, and that "whenever possible, alternative methods of assessment" should be used.

The school also said it had set up a task force in the spring to address the issue of remote testing, and it updated the language on its coronavirus website to include a message from the Office of Counsel that said professors cannot compel students to use proctoring apps. At the same time, the school said it was negotiating contracts with two more companies to provide proctoring services.

Grama said he's counting the school's email as a win, but it's not the end of the story.

"One of the big issues in having students come out publicly against this, is fear of retribution from professors"

Kesi Gordon, who recently graduated from CUNY's York College, was part of the proctoring app task force and kept students informed as to the committee's progress. She told Digital Trends that while the school has backed off of forcing students to use proctoring apps, individual professors are still insisting.

"The university is trying to push other means, but it's the decision of the instructor to use remote proctoring if they feel it's necessary," Gordon said. "Certain professors feel this is the best way to have integrity, but there's other ways. Distance learning makes learning harder for some people. Professors should make sure people are really learning, and not just trying to catch them cheating."

"One of the big issues in having students come out publicly against this, is fear of retribution from professors," said Benjamin, a senior finance major at Baruch College who asked to be anonymous for exactly this reason. "In the first week of classes, I had a professor who was very snarky about using a proctoring service, making comments like 'Oh, you think you're going to be able to cheat! well you're not!'"

Eyecrave/Getty Images

After the email to professors went out, Benjamin said another professor said they would disable Proctorio, but only reluctantly. "I wouldn't say they sounded upset, but they definitely weren't happy about the development," he said.

Grama said students were not made aware their classes would be using Proctorio until after he got his syllabi. At that point, for many students, their schedules for the semester were already set, making it difficult for students to opt out of using the software or switch their classes. Students may feel caught, as they are unable to switch their classes, unwilling to let themselves be monitored, and afraid of running afoul of their professors.

"People on Discord are still saying, 'Oh, my professor is forcing us [to use the apps],' and that professor has tenure, so no one will do anything," Grama said. "You don't want to be on the professor's naughty list."

"I 110% sympathize with the admins who have to try to make this call, but the thing is, I can't think of a scenario where I, as a student, would feel comfortable going to a professor and saying, 'Hey, I don't agree with using this proctoring service, I want you to disable it for our exam,'" Benjamin said.

Furthermore, Grama said, maintaining academic integrity doesn't seem like a fair trade if you're forced to give a piece of software access to your whole life. "Nobody is saying academic integrity isn't a problem," Grama said. "Sure they want to stop students from cheating, but these apps have access to all the files on your computer, and the privacy settings on your browser, and access to your camera and microphone."

Editors' Recommendations

- A beginner's guide to Tor: How to navigate the underground internet
- Protect your privacy with the best cheap VPN deals for October 2020
- What is Incognito Mode?
- How to get Android apps on a Chromebook
- Arduino vs. Raspberry Pi

The best laptops for 2020

1 DAY AGO

The 15 best tech jobs boast top salaries, high satisfaction, lots of openings
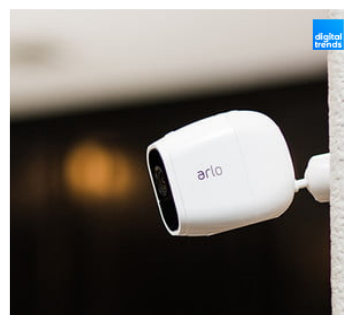
The best home security cameras for 2020

Chromebooks vs. laptops

4 DAYS AGO
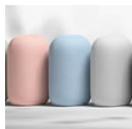
Google Nest Audio is a proper successor to the aging Google Home smart speaker

6 DAYS AGO
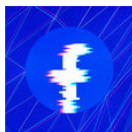
Facebook to ban ads that claim election win before official announcement

5 DAYS AGO

Overwatch cross-platform support: Everything we know

Instagram merges with Messenger for easier cross-platform messaging

5 DAYS AGO

5 DAYS AGO

ULA scrubs launch of mighty Delta IV Heavy rocket with seconds to go

SpaceX's Crew Dragon suffered more damage than expected on recent mission

5 DAYS AGO
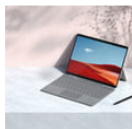
5 DAYS AGO

Microsoft unveils the budget-friendly Surface Laptop Go and new Surface Pro X

5 DAYS AGO

Samsung Galaxy S21, S21+, and S21 Ultra: Everything we know so far

5 DAYS AGO
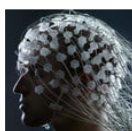
Amazing wearable could detect epileptic seizures an hour before they strike

5 DAYS AGO

Google Pixel 5: Everything you need to know

Amazon reveals how many of its workers have caught COVID-19

5 DAYS AGO

4 DAYS AGO

iPHONE APP ON THE App Store

ANDROID APP ON Google Play

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Updates

UBC Students Reject the Use of Proctorio's Invasive & Unethical Technology
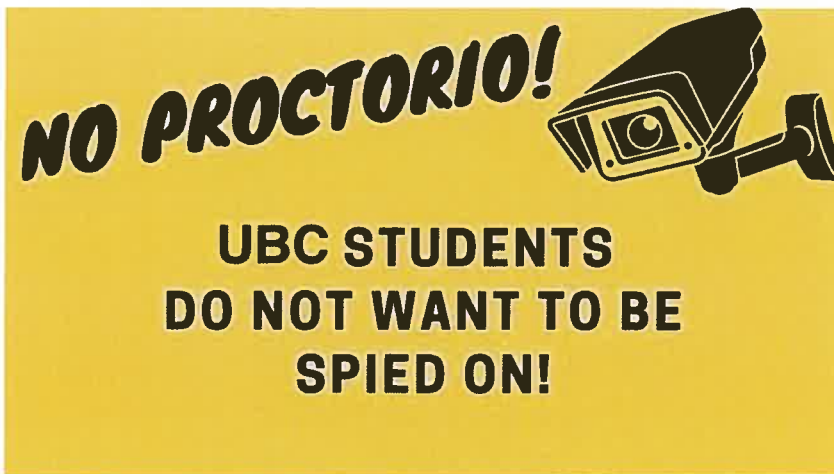
UBC Students Resist started this petition to
ainsley.carry@ubc.ca and 6 others

We want UBC to stop using Proctorio for assessments. Proctorio is known to be an ineffective tool to enforce academic integrity. It is an invasive technology that violates student privacy. We don't

Complete your signature

1,575 have signed. Let's get to 2,500!

Melanie Yien signed 7 minutes ago

Александра Салимова signed 23 hours ago

First name

Last name

Email

want our education driven by tools of mass surveillance.

There have been many red flags along the way, from the CEO releasing a student's chat log (1, 2) just to be "right" in the UBC subreddit of all places, to suing UBC's staff (3, 4, 5), Ian Linkletter, for sharing "confidential information" (see: link to an unlisted YouTube video by Proctorio, the company we are trusting with tons of sensitive data) who began a dialogue around the unethical nature of tools like Proctorio and its impact on student privacy. We see the aggression and intimidation Proctorio perpetuates, this is not the first time Proctrio CEO has resorted to intimidation (6), and we refuse to support their services.

Even after the AMS put out a letter against Proctorio (7), UBC has continued on with Proctorio (8, 9), just recently renewing their contract with the company. UBC chose not to take a strong stance for its students, so now we must demand it LOUD AND CLEAR.

There is a severe lack of transparency around how the video recorded by Proctorio is used, what gets flagged, and who gets to see it. UBC Students should know that Proctorio flags "suspicious behaviour" by tracking/ controlling a host of things, including:

1. Your Microphone

2. Your Webcam

3. Your Physical Location

4. Your Identity

5. Your Eye Movement

6. Your Head Movement

7. Scans your room/ testing environment via webcam

8. Your Browser Size

9. Browser Tabs and Windows You Have Open

10. Your Cursor Movements

11. Your Entire Screen

12. Any Applications Running on Your Computer (got apps running in the background? Proctorio is tracking that too)

13. Number of Display Screens Connected to Your Computer

14. Your Clipboard (text you have copied)

15. Any Website You Visit

This gives Proctorio WAY too much control within a student's computer. It is also, very clearly, a tool that disadvantages neurodivergent students, students with disabilities, or those who are unable to take their exams in a distraction-free and private environment

due to child-care or other familial responsibilities or limited resources. This enhances the negative effects of inequities amongst students, and upholds ableist and racist values (e.g. not recognising dark faces, flagging head coverings). (10, 11, 12, 13)

"suspicious behaviour" ≠ cheating

Academic integrity cannot be enforced by policing student behaviour. Instead, building a culture of trust and a focus on learning & building community will further incentivize learner centric values. Moreover, there are many alternatives to Proctorio, including assessment styles that challenge students and test knowledge effectively, where critical thinking and analysis are centred. Technological "solutions" like Proctorio are unnecessary for issues rooted in pedagogy.

An education system that reinforces distrust, and poses students and teachers as rivals trying to outsmart each other is NOT an education system we want. We want to be part of a supportive community, a kind, compassionate knowledge society. And that means rejecting spyware in our education technology.

This is an equity issue. This is a privacy issue. This is a student dignity issue.

Sources:

1. Proctorio CEO releases student's chat logs, sparking renewed privacy concerns [June 30, 2020] https://www.ubyssey.ca/news/proctorio-chat-logs/

2. CEO of exam monitoring software Proctorio apologises for posting student's chat logs on Reddit [July 01, 2020] https://www.theguardian.com/australia-news/2020/jul/01/ceo-of-exam-monitoring-software-proctorio-apologises-for-posting-students-chat-logs-on-reddit

3. Software company sues UBC employee over tweets involving confidential videos [September 03, 2020] https://vancouversun.com/news/software-company-sues-ubc-employee-over-tweets-involving-confidential-videos

4. In Defence of Ian Linkletter [September 03, 2020] https://blog.communityofpraxis.ca/2020/09/03/in-defence-of-ian-linkletter/

5. Proctorio sues UBC staff member for tweets sharing 'confidential' information about the software

[September 03, 2020] https://www.ubyssey.ca/news/proctorio-sues-linkletter/

6. Students Are Rebelling Against Eye-Tracking Exam Surveillance Tools [September 24, 2020] https://www.vice.com/en_ca/article/n7wxvd/students-are-rebelling-against-eye-tracking-exam-surveillance-tools

7. [AMS] Open letter regarding the usage of Proctorio [July 3, 2020] https://www.ams.ubc.ca/news/open-letter-regarding-the-usage-of-proctorio/

8. Facing student privacy concerns, UBC maintains relationship with Proctorio [July 03, 2020] https://www.ubyssey.ca/news/ubc-maintains-proctorio-relationship/

9. Letter to the community regarding Proctorio [July 03, 2020] https://academic.ubc.ca/academic-community/news-announcements/news/letter-community-regarding-proctorio

10. Our Bodies Encoded: Algorithmic Test Proctoring in Higher Education [April 02, 2020] https://hybridpedagogy.org/our-

bodies-encoded-algorithmic-test-proctoring-in-higher-education/

11. Software that monitors students during tests perpetuates inequality and violates their privacy [August 7, 2020]

   https://www.technologyreview.com/2020/08/07/1006132/software-algorithms-proctoring-online-tests-ai-ethics/

12. Paranoia about cheating is making online education terrible for everyone [May 4, 2020]

   https://www.vox.com/recode/2020/5/4/21241062/schools-cheating-proctorio-artificial-intelligence

13. Mass school closures in the wake of the coronavirus are driving a new wave of student surveillance [April 1, 2020]

   https://www.washingtonpost.com/technology/2020/04/01/online-proctoring-college-exams-coronavirus/

Note: The University of California, Berkeley banned online exam proctoring on April 20, 2020. It wouldn't be ground-breaking for UBC to do the same thing.

- https://www.nytimes.com/2020/05/10/us/online-testing-cheating-

universities-coronavirus.html

- https://academic-senate.berkeley.edu/sites/default/files/guidance_and_recommendations_from_the_working_group_on_exams_and_proctoring.pdf

Start a petition of your own

This petition starter stood up and took action. Will you do the same?

Start a petition

Updates

1,500 supporters	5 days ago

UBC Students Resist _ started this petition	2 weeks ago

Reasons for signing

Naveen Sivasankar · 2 weeks ago

Proctorio has been involved in some questionable incidents and involves sharing personal and private data with an external organization. Proctorio has repeatedly shown that it is not a trustworthy service and invades the privacy of students. It is shameful for

UBC to use such a service if it cares even a little about its students.

☐ 8 · Report

Bethany Kolisniak · 2 weeks ago

I'm signing for all the reasons listed here. Proctorio is also deeply classist - it requires students to have the adequate technology (computer with high enough RAM, webcam, etc) as well as a distraction-free space which is not accessible for many students. Shame on UBC for continuing to use this invasive software.

☐ 6 · Report

View all reasons for signing   ☐

Report a policy violation

Petitions promoted by other Change.org users

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☐ **Trending on Change.org**

☐ **Trending on Change.org**

Save MEC

SAVE BABIES | Help approve Zolgensma in Canada

Protect our front line health care workers against COVID-19

UPDATE: We're now seeking contributions to a legal fund to fight to save MEC. You can contribute at our

Sign the petition

Sign the petition

Sign the petition

☐ **Trending on Change.org**

☐ **Trending on Change.org**

Close All Schools in Canada Immediately to Stop COVID-19

Sign the petition

Trudeau Government: Act NOW to Protect Canadians from Novel

Sign the petition

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☐ **Trending on Change.org**

Provide #FairMedicine to protect Inuit babies from RSV deaths

Sign the petition

Canada Needs to Step Up For Mental Health

My name is Noah Irvine, I am a first

Sign the petition

Fines for people calling 9-1-1 to complain about Amber Alerts.

Sign the petition

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☐ **Trending on Change.org**

☐ **Trending on Change.org**

Seatbelts for Canadian School Buses, Now!

The picture above cost a child's life

Sign the petition

Disney robs Swahili of "Hakuna Matata"

English / German / Italian

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Ban the Sale of Elephant Ivory in Canada #IvoryFreeCanada

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Loblaw Companies Inc: Provide sustainable food packaging before Earth

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Demand the UCP continue work on banning conversion therapy for

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Police Division to Enforce Animal Protection in Ontario

Sign the petition

☐ **Trending on Change.org**

Tim Hortons, we know you can make and use a #BetterCup!

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English (Canada)

 English (Canada)

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Protect Student Privacy: A Renewed Call to Action Against Proctorio

Oct 1, 2020

To: Provost Andrew Szeri, President Santa Ono, Dr. Simon Bates, Dr. Christina Hendricks, Paul Hancock and the Office of the University Counsel, Deans, Associate Deans Academic, Senate Teaching and Learning Committee of UBC,

As we begin the Fall 2020 semester and transition into the midterm season, it is evident the increased strain many staff, students, and faculty encounter as a result of the global pandemic and thank the staff and faculty for their service.

We believe that there has been tremendous work done to support and provide resources to faculty in identifying alternate final assessment options in order to avoid Proctorio and other remote invigilation software through the work of the. While we previously published an open letter regarding the usage of Proctorio, we must ensure that the work is followed through on. We want to amplify the calls of student petitions against the usage of Proctorio in asking that UBC stop the usage of Proctorio. Peer institutions such as CUNY and UCB have taken decisive leadership on addressing these issues by prohibiting outside proctoring products and ensuring that instructors are not compelling students to use Proctorio.

On September 3, Proctorio served a lawsuit to Ian Linkletter in response to his fundamental work that highlighted the mechanisms by which Proctorio works - intended to intimidate whistleblowers and limit the academic freedom of members of the community. The continued patronage of this company while it sues one of the valued members of our community is something that, as a UBC community, we cannot stand for.

We must oppose the continued usage of unethical, invasive remote proctoring software such as Proctorio. We renew our calls for the end to the usage of Proctorio on these grounds:

1. **Demonstrating Compassion for Students, Staff and Faculty:**
Principle #1 in the Guiding Principles for the Fall 2020 Adaptations: Approach course adaptations decisions with a commitment to compassion and care for everyone involved.

It takes one look at social media, whether this Twitter thread dedicated to Proctorio horror stories or the numerous Reddit threads voicing their extreme discomfort with Proctorio. The key insight with Proctorio and other remote invigilation software requiring microphone and camera such as ProctorU. We must ask ourselves - is the continued usage of Proctorio in line with the guidance that has been given in the Guiding Principles for Fall 2020 Adaptations? Is this in line our values of compassion and flexibility?

Students have repeatedly shown that their mental wellbeing and academic performance suffers when utilizing Proctorio, causing anxiety attacks, poor performance, and incredible stress. Proctorio adds unnecessary stress to an already stressful situation.

It is vital to recognize the amount of work that has been put into adapting Fall 2020 for the online learning conditions. We recognize how the COVID-19 pandemic has created challenges surrounding rising incidents of academic misconduct, and we commend the efforts of faculty and teaching staff to produce a quality online teaching experience. We thank all faculty and staff for their unrelenting efforts to provide academic continuity under incredibly difficult circumstances, on whole new platforms. However, this should not be grounds to outsource academic integrity and to effectively punish students through Proctorio.

To mandate students to use Proctorio is coercive and uncompassionate. Telling students 'if they don't want to use Proctorio, drop the course.' It is a global pandemic - we must build compassion into our approaches to online learning. Best illustrated by Brenna Clarke Gray's defence of Ian Linkletter, we demonstrate care by trusting students.

2. Leadership by Peer Institutions

Postsecondary institutions such as CUNY and UCBerkeley has taken tremendous leadership to discontinue the usage of Proctorio, based on student feedback and advocacy against the usage of Proctorio.

Students at CUNY launched a petition against online proctoring software. On September 14, the Office of the Provost of CUNY released this statement detailing that instructors may not compel students to use online proctoring. "*The Office of Legal Affairs (OGC) has reviewed the Terms and Conditions of several online testing application services and it is OGC's position that faculty cannot compel students to accept the corresponding tools "Terms and Conditions" and that in the event students do not accept the terms, faculty must provide students reasonable assessment accommodations to demonstrate they meet the course learning requirements.* "

In April, a Working Group on Online Examinations and Proctoring for the Spring Semester 2020 released guidance "Thus, the EVCP's executive order on March 27 prohibiting "outside proctoring products and Zoom proctoring" during the Spring 2020 semester remains in place."

We call upon UBC to exhibit similar decisive leadership to ensure UBC students are not compelled to use Proctorio, in order to foreground compassion.

3. Unethical Behaviour

The continued unethical behaviour by Proctorio and Proctorio's CEO, Mike Olsen, is very well documented, including the incident where a student's chat logs were released in a Reddit thread - sparking privacy concerns. Though it may not have been determined to have broken the letter of the law, it was evidently unethical.

It is evident that the [lawsuit pursued against Ian Linkletter](#) is a Strategic Lawsuit Against Public Participation. This is only the tip of the iceberg, when it comes to the intimidation tactics used to silence critics of Proctorio.

Is this a software that UBC wants to continue to fund and mandate students use? What kind of message does that show to students, staff, and faculty speaking out against Proctorio - that their input is unwanted or unheard? If UBC continues to fund this, it shows that UBC condones breaches of ethics, despite that contradicting the values UBC sets out as an institution with regards to accountability, academic freedom, integrity, and respect?

4. **Capacity of UBC to Design Fair Assessment**
    a. **False Sense of Academic Integrity**

UBC has demonstrated the capacity to provide alternatives to Proctorio, namely through other remote invigilation tools such as Examplify, Respondus Lockdown Browser, Zoom invigilation, and other support through the Centre for Accessibility. Though there are problems with tools with Respondus Lockdown Browser, it remains that there has been a mass mobilization to adapt courses online, whether it has been offered through the Centre for Teaching and Learning Technology - and abundant resources on designing alternate assessments. Refer to Guiding Principle 2, including [Alternatives to Remotely Proctored exams](#).

However, we must hold ourselves accountable in doing the due diligence in adapting these courses, rather than outsourcing academic integrity to tools such as Proctorio.

There is no empirical evidence that Proctorio and other remote invigilation software actually prevents academic misconduct. While the usage of remote invigilation software may prevent, there are many ways to circumvent the software, including the usage of secondary devices that are undetectable by Proctorio. This leads to a false sense of academic integrity, when there are many other ways to ensure that academic integrity is enshrined.

During the past, present, and future – regardless of a pandemic, – students deserve to have fair assessments conducted in good faith by instructors who treat them with a high degree of trust, respect, and dignity. There are many ways to build academic integrity and values of honesty within assessments that do not require Proctorio's unnecessarily invasive surveillance.

5. **Equity Concerns and Discriminatory Programming**

There are numerous difficulties with Proctorio arbitrarily flagging students with darker skin tones, students with disabilities, neurodivergent students, and students with religious head coverings. Proctorio discriminates against people of colour, students with accessibility needs and medical conditions, trans students, students with connectivity difficulties, and students with children by flagging "abnormal" behaviours and denying access to certain groups of students. Furthermore, students in China have expressed significant difficulties accessing Proctorio due to firewall restrictions.

As an institution that prides itself on our commitments to equity, diversity, and inclusion and the Inclusion Action Plan's Goal 4.B of "implement[ing] inclusive course design, teaching practice, and assessments," UBC should not be subscribing to a pedagogy of punishment by investing in discriminatory surveillance practices. No student should have their grade put at risk due to biased data algorithms and technical difficulties.

In the guidance given in the "Principles for Appropriate Use of Remote Invigilation Tools," "due to varying situations, including health issues, family circumstances, geographical location, and more, some students will face more barriers to using these tools than others. Making fair decisions does not mean treating everyone in the same way; fairness requires flexibility, and individual circumstances must be considered to make fair decisions."

In addition to Ian Linkletter's work, there is an abundance of literature and work on this topic, including:
- "Our Bodies Encoded" by Shea Swauger
- "Centring a Critical Curriculum of Care During Crisis" by Maha Bali
- "School Work and Surveillance" by Audrey Watters
- "A Guide for Resisting EdTech" by Sean Michael Morris and Jesse Stommel
- "Spotlight on Alternative Assessment Methods" by Tim Fawns and Jen Ross

6. Widespread Technology Difficulties
There are widespread difficulties with connectivity issues, access to adequate technology, particularly for students in rural areas with little internet connection (and significantly, on UBC campus and in the Lower Mainland). In addition, not everybody has access to a working webcam, microphone, nor a laptop that can handle Proctorio. Students report not being able to contact an instructor for test-related questions, due to not having access to technology.

We should not be introducing further inequalities into a system that is already highly inequitable. Though UBC offers technology bursaries and data cards, it is evident that these technology bursaries are not adequate, given the turnaround on being able to buy a laptop for many students.

7. Privacy Concerns
Proctorio's own functionalities disclose that Proctorio can, for up to two years:

- Can READ and CHANGE all the data on a student's web browser,
- Modifies students' keyboard functionality,
- Monitors and stores KEYSTROKE movements while using the computer,
- Captures ALL SCREEN CONTENT on the student's computer,
- Manages and CHANGES any downloads on the student's computer,
- Identifies ALL devices connected to a student's computer,
- Manages ALL apps, extensions, and even themes on a student's computer,
- Changes ALL privacy-related settings on a student's computer,

- Monitors EYE MOVEMENTS via webcam and saves all recordings,
- Records and stores ALL sounds while in use,
- Requires initial and periodic ROOM scans.
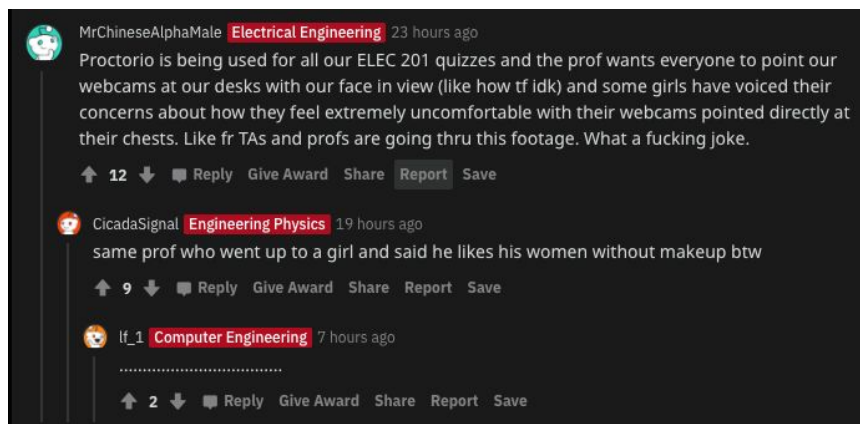
[Screenshot from Reddit about students being forced to use Proctorio and having to point their webcams at their desks, making female students uncomfortable.]

This is particularly significant for students with female-identifying students, nonbinary students, students from low income families, and students with young children who may feel deeply uncomfortable with Proctorio recording the contents of their home. Proctorio is essentially spyware - it is an abhorrent violation of student privacy and civil rights.

8. Proctorio's Terms of Service

Proctorio's own terms of service, as of Sept 20, 2020, states "You may not mandate Authorized End Users use the Application Service." Quite simply, this indicates that students *cannot* and should not be compelled to use Proctorio.

[Left: Sept 26, 2020. Right: Sept 20, 2020.)

[In fact, this has been pointed out by Proctorio's own CEO in a September 11 blogpost.](#)
"**Results-Driven Models.** Students may not be mandated to use Proctorio. Institutions should provide alternate modes of assessment that do not affect the student's ability to pass an exam or course."

But after CUNY published guidance against remote invigilation services, [they changed this on September 16, 2020.](#)
Did Proctorio consult at all with stakeholders and institutions utilizing its services before changing its terms of service? Under contract law, terms of service must be changed under mutual consent between both parties.

9. **UBC's Responsibility in Protecting Academic Freedom**

The question throughout all of this is - will UBC continue to fund a company that is suing a member of the community that has demonstrated exceptional scholarship and care for students? UBC has a responsibility to uphold academic freedom. It is evident that this is a Strategic Lawsuit against Public Participation, intended to intimidate whistleblowers and critics of Proctorio.

It is imperative that we must act to protect the academic freedom of Ian Linkletter and other UBC community members. What message does that send to students, staff, and faculty? We stand by Ian Linkletter.

As members of the UBC community, we call upon UBC to end the use of invasive, unethical software.

Barrier to Action: Accreditation Requirements

It is notable in many professional, vocational, or otherwise accredited programs such as Medicine, Pharmacy, Nursing, Engineering, and many more that there are significant accreditation requirements. However, it is notable that none of the accreditation requirements specifically refer to mandating the usage of Proctorio - these can easily be achieved through other methods as indicated in the section under the capacity of UBC to design fair assessments and other exam tools such as Examplify and Zoom proctoring.

As an example, language from ETS reads: For courses to be delivered remotely, all exams (midterms, finals) will be held remotely. They will be invigilated using the computer's camera and microphone, and may be recorded. This is necessary in order to comply with the requirements of the Canadian Engineering Accreditation Board (CEAB) in ensuring the validity of evaluations.

It is evident that Proctorio is not suitable for these courses. We ask UBC to also be an advocate and push these accreditation boards to ensure the ethical and compassionate.

Barrier to Action: Legal Action

We understand there may be legal repercussions associated with terminating a contract. However, it is evident that Proctorio has demonstrated repeated unethical behaviour and contravenes UBC's values, including numerous attacks on members of the UBC community.

UBC also has a legal duty to provide accommodations for students with disabilities, and to compel students - even students who are not registered with the Centre for Accessibility as a support resource, is unethical. Students may also have invisible physical or mental health needs that may not have been discussed with the instructor. We call on UBC to terminate its contract with Proctorio.

We must hold UBC accountable to an ethical and compassionate approach to assessment and inclusive education. We renew our calls from the previous open letter and call on UBC to implement and take swift action on the following recommendations:
1. **UBC must end its relationship with Proctorio through the termination of its contract or otherwise, discontinuation of its contract.**
2. **UBC must give the guidance that instructors may not compel students to participate in online proctoring.**
3. **UBC instructors must provide low barrier options to opt out of remote proctoring software.** This must be universally implemented across all faculties. Behaviour such as telling students to drop the course if unwilling to use Proctorio or other remote invigilation software is unacceptable and manipulative. No student should have their grade or academic standing put at risk due to Proctorio.
4. **UBC must act to support the academic freedom of students and staff members like Ian Linkletter.** UBC has an institutional commitment towards academic freedom, a scholar's freedom to express ideas through respectful discourse and the pursuit of open discussion, without risk of censure. Academic freedom must extend to staff members and students. If UBC does not heed the caution given, what message does it send to staff, faculty, and students?

We, the undersigned UBC students, staff, and faculty call upon UBC to make the compassionate choice, to implement these recommendations in order to end the usage of Proctorio.

[As of Oct 6, there are 142 signatories]

Georgia Yee (author)
AMS VP Academic and University Affairs

Alexander Martinez
BASc Student

Ava Peacock
BAsc Student, 1st Year

Arshiya Malik

Rohan Prasad

Student

Rohan Lodhi
Student

Lok Tung Tiffany Chong
Student

Ali Bouzari
Student

Max Naylor
BComm Student, 1st Year

Tara Vollbrecht
BA Student, 2nd Year

Anqi Xu
BASc Student, 1st Year

Mischa Johal
BASc Student, 1st Year

Harry Hu
BASc Student, 1st Year

Sylvan Hartshorn Bunis
BASc Student

Josh Lim
Student

Joshua Medina-Quiaro
3rd Year Sciences

Lars Rucker
Student

Felipe
Student

106 signatories that wished to remain anonymous.

Student

Anson Cheng
Student

Andy Zhu
BAsc Student, 1st Year

Alexander Evans
Student

Jacob Balagot
Student

Charles Streeter
Student

Kevin Heieis
BASc Student

Emma Dodyk
EUS President
BASc Student, Materials Engineering, 5th Year

Liam Hinderks
President of the First Year Council, First Year Engineering, Faculty of Applied Sciences

Mark Peralta
Student

Soren Stenback
Computer Science Student

Kirill Kudriavtsev
Student, 1st year Applied Science (Engineering)

Leonardo Dutra Soares
Student

Adlai Schlager
Student

9/27/2020   Ian Linkletter on Twitter: "@DonnaLanclos @cogdog @SheaSwauger I'm agitated tonight because the CEO of Proctorio attacked a stud…

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 Twitter

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Dr. Donna Lanclos @DonnaLanclos · Jun 8
h/t @cogdog for pointing to this marvelous piece by @SheaSwauger "the burden should be on tech companies to prove to us how their technology isn't oppressive, not on their critics to prove that they are."

Taking Back the Narrative of Ed Tech
We must have a critical approach to technological 'solutions' and make sure the best available …
🔗 sheaswauger.com

○ 2   ⟲ 51   ♡ 112   ⬆️

Ian Linkletter
@Linkletter

Replying to @DonnaLanclos @cogdog and @SheaSwauger

I'm agitated tonight because the CEO of Proctorio attacked a student in my University's subreddit, calling them a liar and posting their chat support logs. Many examples of this online. Unacceptable behaviour. One sloppy CTRL+F away from breaking the law.

old.reddit.com/r/UBC/comments...
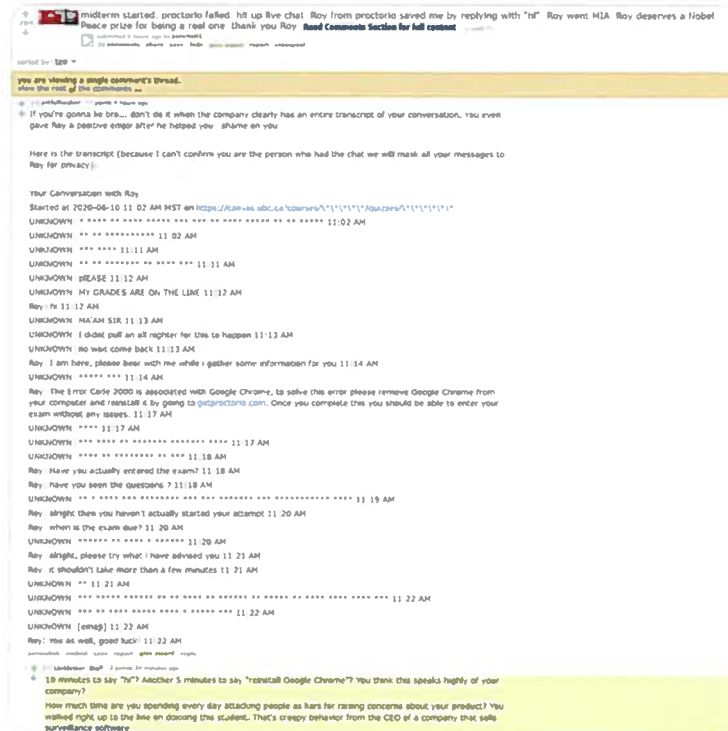
11:21 PM · Jun 26, 2020 · Twitter Web App

ıl। View Tweet activity

77 Retweets   **46** Quote Tweets   **158** Likes

○   ⟲   ♡   ⬆️

Ian Linkletter
@Linkletter

Ian Linkletter @Linkletter · Jun 26
Replying to @Linkletter @DonnaLanclos and 2 others
"It's hilarious, students pretending to care where their data goes. Whether

Relevant people

Ian Linkletter
@Linkletter
Let's go exploring! H

Dr. Donna Lanclos
@Donn…   Follows y
Anthropologist. Fem
Witch. Time Lord. H
Sidhe. Kraken. Cron
Dragon. Selkie. She/
to give.

Alan Levine
@cogd…   Follows y
Barks about web tec
cogdogblog.com Di
guitars, #ds106, Wo
coding, the Who. M
@corisaas

What's happening

US elections · 56 minutes ago
Trump paid $750 in federal income taxes in 2016 and 2 New York Times reports
Trending with: Deutsche Bank

#StarbucksStarDays
More Stars. More Rewards.
↗️ Promoted by Starbucks Canad

Politics · Trending
Ivanka
Trending with: #TrumpCrimel
136K Tweets

▶ **Toronto Star** ✓ · Earlier tod
Can Canada's border be rec safely in a COVID-19 world

Politics · Trending
Melania
56.5K Tweets

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"It's hilarious, students pretending to care where their data goes. Whether they're cheating or not, I don't really care, but then they go out and they just say things. They don't do any research, they just make things up, and then it gets amplified".

American Invigilation Software & UK Exams - TechRound
Thousands of British students have been instructed to open their computers to American tech company Proctorio that gathers a lot of …
🔗 techround.co.uk

💬 3   ⟲ 7   ♡ 15   ⬆   �

Shea Swauger @SheaSwauger · Jun 27
@thecorkboard thought you might be interested

💬   ⟲   ♡ 2   ⬆

jugni27 @therealjugni · Jun 27
Replying to @Linkletter @DonnaLanclos and 2 others
Students are human. Online invigilation software doesn't replicate the students normal learning environment. I'm sure this interaction increased the students stress.l and exam performance. And to not consider that is just plain mean.

💬   ⟲ 2   ♥ 13   ⬆

This Tweet was deleted by the Tweet author. Learn more

𝑀𝑎ℎ𝑎 𝐵𝑎𝑙𝑖, PhD مها بالي 🌵 @Bali_Maha · Jun 27
This guy has a bad enough history as it is, but going after *students* is beyond going too far!

💬 2   ⟲ 1   ♡ 31   ⬆

2 more replies

Rob Peregoodoff @rperegoodoff · Jun 29
Replying to @Linkletter @DonnaLanclos and 2 others
Hi Ian. On vacation so late to the dance party. Well done starting this thread. Use of surveillance technology now for digital exams (or ever) is the lazy response. What makes me shake my head is why any self-respecting institution would outsource its Tier 1 support is beyond me

💬   ⟲   ♥ 1   ⬆

Drew M. Loewe #GoHawks @drewloewe · Jun 28
Replying to @Linkletter @DonnaLanclos and 2 others
My go-to for all things Proctorio.

I am the great Proctorio! Are you threatening me?

▶

Ian Linkletter
@Linkletter

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GIF
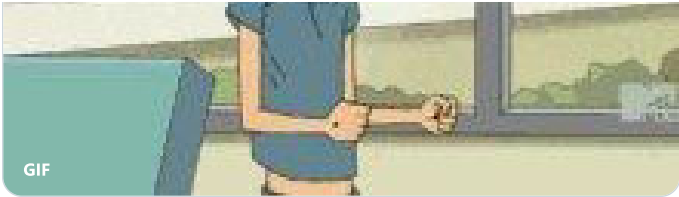
💬 1   🔁 1   ❤️ 5   📤

Dr. Donna Lanclos @DonnaLanclos · Jun 28   ∨
actual LOL this is perfect.

💬   🔁   ❤️ 1   📤

Dylan Braam @rollobraam · Jun 28   ∨
Replying to @Linkletter @DonnaLanclos and 2 others
"Because I can't confirm it's you I'll mask it for privacy"
As if it would have been ok if you knew for sure it was them to post their full transcript publicly

💬   🔁 2   ❤️ 3   📤

Michael McCabe @codmccabe · Jun 27   ∨
Replying to @Linkletter @DonnaLanclos and 2 others
More reason to not use them.

💬   🔁   ❤️ 1   📤

JackNet @JackNetFL · Jun 28   ∨
Replying to @Linkletter
This spyware is the reason why I'm forced to use Windows during my whole college program. Universities with computer science and engineering programs should support more free and open source software.

💬   🔁   ❤️ 4   📤

Berry @Bluesonberry · Jun 29   ∨
Replying to @Linkletter @DonnaLanclos and 2 others
@ubcprez Is UBC planning on taking the moral high ground and addressing this egregious misuse of personal info, or will this be swept under the rug?

💬   🔁   ❤️ 3   📤

This Tweet was deleted by the Tweet author. Learn more

Gordon McLeod @LearnTribe · Jun 27   ∨
Student trying to sit an exam & has tech fail. Reasonable to be upset waiting 15 mins to be offered a solution. Reinstall browser (not update or disable feature) is unusual fix. Vendor slapdown posting the private support chat to public forum is completely unacceptable breach

💬   🔁   ❤️ 11   📤

Show more replies

Ian Linkletter
@Linkletter   ∨

9/27/2020 Ian Linkletter on Twitter: "@DonnaLanclos @cogdog @SheaSwauger I'm agitated tonight because the CEO of Proctorio attacked a stud…

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https://twitter.com/Linkletter/status/1277015415823065089/photo/2

Ian Linkletter
@Linkletter

Proctorio Damage Control

Don't let this be forgotten...

Ian Linkletter @Linkletter · Jun 26
Replying to @DonnaLanclos @cogdog
and @SheaSwauger

I'm agitated tonight because the CEO of
Proctorio attacked a student in my
University's subreddit, calling them a liar
and posting their chat support logs. Many
examples of this online. Unacceptable
behaviour. One sloppy CTRL+F away from
breaking the law.

old.reddit.com/r/UBC/comments...
pic.twitter.com/btv5TB3g1B

4:06 PM · Jun 27, 2020 · Twitter Web App

31 Retweets   **7** Quote Tweets   **68** Likes

[−] **artfulhacker** -1 points 4 hours ago

I removed the transcript, you don't need to prove anything,
apologies for posting it. Seriously send me a message if I
can help.

permalink   embed   save   parent   report   give award   reply

Kim Jaxon @drjaxon · Jun 27
Replying to @Linkletter and
@SheaSwauger
Tweeted my disgust about
proctoring software last year. Didn't
even mention them by name. A rep
emailed, asking if they could talk to
understand my "views about
learning." At the end of the call, they
told me they'd looked at my Twitter
likes and I should "be careful."
#pattern

Ian Linkletter @Linkl... · Jun 27
I hope after today people feel safe
to share private threats and
harassment. I wonder how many
people's bosses have been
contacted. I can't stop thinking
about what happened to me the last
(and hopefully final) time an ed tech
CEO contacted my employer.

Ian Linkletter -
Protecting Our ...
youtube.com

1 more reply

youssef fouad @you... Jun 28
Replying to @Linkletter

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Attached to my June 27th 2020 "Proctorio Damage Control" tweet (included in Exhibit E of Devoy affidavit) are four images showing events from the day.

[−] **artfulhacker** 111 points 21 hours ago*

[point made, agent side of the transcript removed]

also just so everyone is clear, only the agents response that was hidden under the scrollbar was visible here. no personal details and no private messages.

we take privacy very seriously.

permalink embed save report **give award** reply
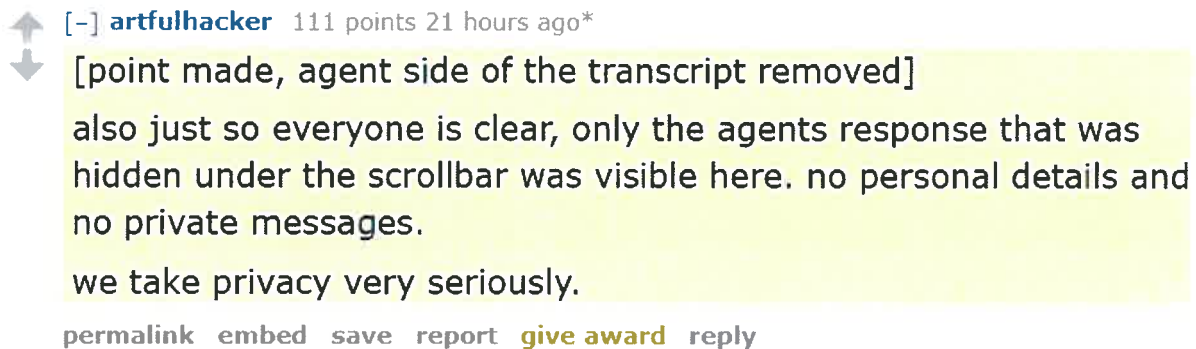
Image 1: The above screenshot is of a Reddit comment left by "artfulhacker" (Proctorio's CEO Mike Olsen) on Friday, June 26 2020 at 6:30pm. I took this screenshot on Saturday, June 27 2020 at 4:00 PM. This is the comment where the CEO temporarily posted a student's support chat logs, leading to controversy.

[−] **artfulhacker** -1 points 4 hours ago

I removed the transcript, you don't need to prove anything, apologies for posting it. Seriously send me a message if I can help.

permalink embed save parent report **give award** reply
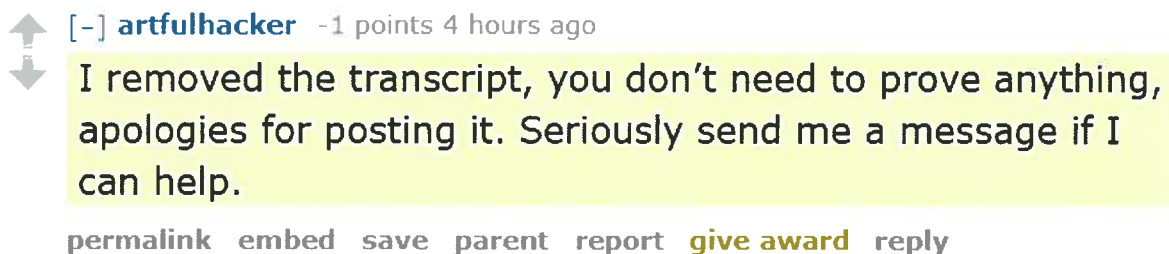
Image 2: The above screenshot is of a Reddit comment left by "artfulhacker" on Saturday, June 27 2020 at 11:40am. I took this screenshot on Saturday, June 27 2020 at 11:51am. He personally apologizes for posting the student's chat logs.

This is Exhibit AC referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia
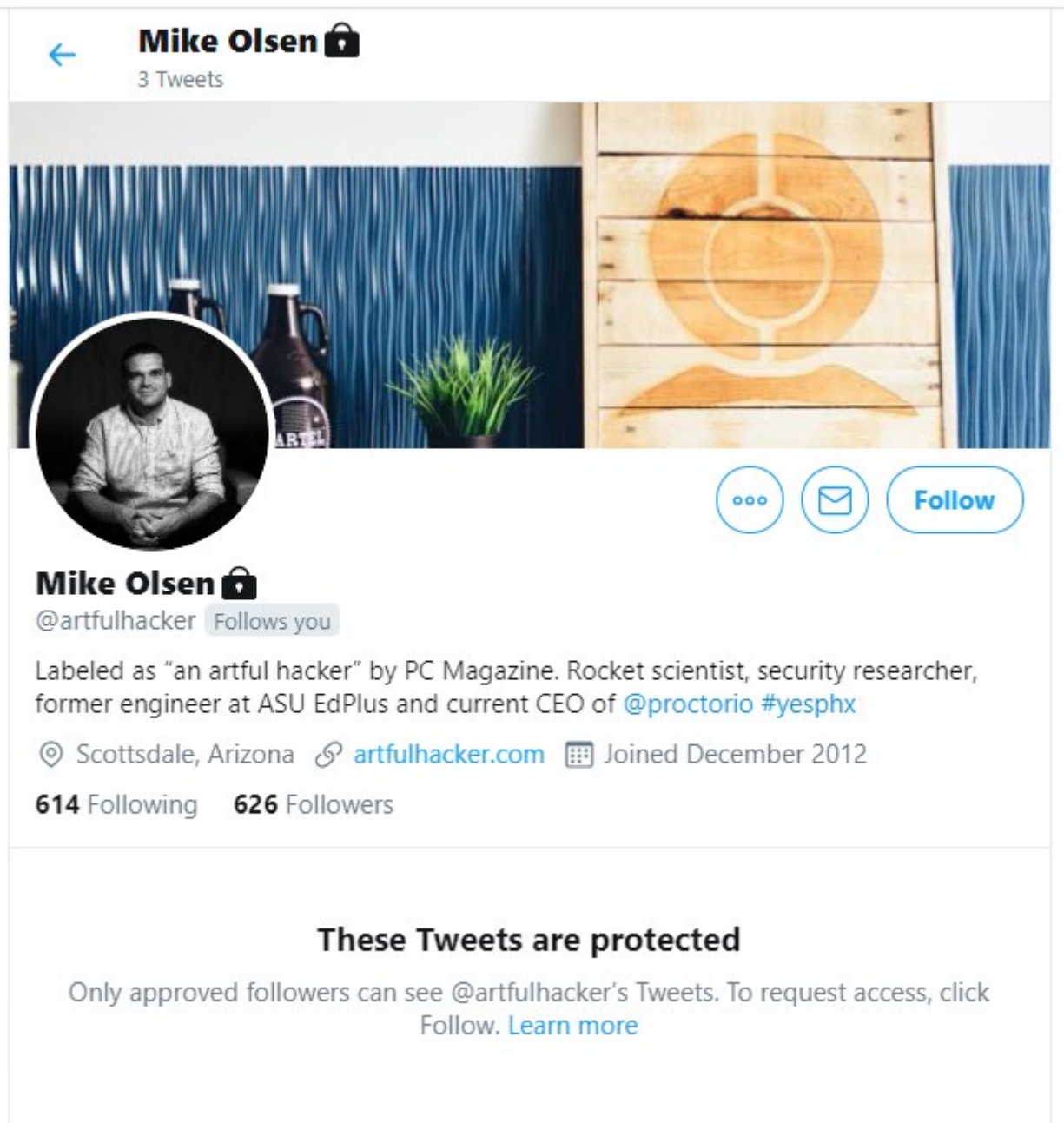
Image 3: The above screenshot is of Mike Olsen's personal Twitter account. His username is artfulhacker on Twitter too. I took this screenshot on Saturday June 27, 2020 at 3:58 PM. On Saturday he "protected his tweets" (making them private) and then followed me on Twitter. He still follows me, to this day. I assume every time I tweet he is notified, based on the speed in which the company reacts to what I write.

Image 4: The above screenshot is of my 11:21 PM tweet from Friday, June 26 2020. Mike Olsen's original reply to me has been deleted, as seen at the bottom.

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Proctorio CEO releases student's chat logs, sparking renewed privacy concerns

Written by Shereen Lee June 30, 2020 · 5 min read

UBC community members are reeling over privacy concerns after the CEO of Proctorio responded to a student's criticism on Reddit by posting the transcript of the student's conversation with a customer support worker.

Proctorio, a virtual proctor in digital exams, is used in various Canvas-based assessments across UBC courses. Over 800 institutions use the software, with reach growing rapidly as education moves online in the wake of COVID-19.

On June 27, Redditor pacertest1 posted a photo of a chat log to UBC's subreddit, claiming that Proctorio support had failed to address issues with an online UBC test.

Several students have shifted their attention towards a more general scrutiny of online learning technologies and invigilation methods. *File Kate Colenbrander*

The user, who identified themselves as a second-year arts student to *The Ubyssey,* quickly garnered sympathy from students who were concerned about the effectiveness of digital proctoring.

- **Students, faculty express concerns about online exam invigilation amidst COVID-19 outbreak**

The thread came to a boiling point when Proctorio CEO Mike Olsen, under username artfulhacker, provided his own response to the student.

"If you're going to lie bro ... don't do it when the company clearly has an entire transcript of the conversation," he said. "[S]hame on you." He posted an edited transcript of the chat logs, which confirmed the facts of the student's post — but also provided evidence that the user had worked with customer support to resolve the issue.

Members of the university community immediately began to question the privacy implications of the move. Ian Linkletter, a UBC learning technology specialist, was particularly outspoken.

Trivia Night at Koerner's Pub
SEP 29
Tuesday, Sep 29 at 6 PM - 8 PM
Koerner's Pub on UBC Campus

"I'm agitated tonight because the CEO of Proctorio attacked a student in my University subreddit, calling them a liar and posting their chat support logs," he tweeted June 26. "Unacceptable behaviour."

UBC did not provide comment by the time of publication.

Olsen later deleted the transcript, reiterating that all user information had been anonymized in his transcript and writing that "we [at Proctorio] take privacy very seriously."

In a statement to *The Ubyssey*, a spokesperson for Proctorio wrote: "Trust is the sum of repeated actions. We will strive to improve upon the support we offer every day. We commit to doing everything we can, from our Support team to our CEO, to continuously show how much we value the trust of students, professors, and administrators."

"Proctorio's proprietary software places privacy at the core of our product," the spokesperson added. "Proctorio is differentiated by its usage of zero-knowledge encryption, which means no one outside of approved faculty or staff members at the institutions, has access to the encrypted data on our own servers. This includes employees at Proctorio."

However, students say the in-software chat records Olsen posted walk a thin line regarding user privacy.

Under the Freedom of Information and Protection of Privacy Act (FIPPA), universities such as UBC are required to protect personal information belonging to individuals operating under its systems. Personal information is defined in the act as "any recorded information that is about an identifiable individual" unless it is contact information.

In a statement to *The Ubyssey*, a spokesperson for the Office of the Information and Privacy Commissioner for BC said that "FIPPA imposes restrictions on how public bodies such as UBC may collect, use and disclose personal information. Public bodies are also required to take reasonable measures to protect personal information from unauthorized access and other risks."

However, they stressed that anonymized data does not necessarily constitute a violation of privacy law, saying that "FIPPA applies if the contents of a communication or any information about that communication identifies an individual."

Whether or not Olsen's message constitutes a disclosure of personal information remains unclear: OIPC declined to comment on the specifics of the case since it could potentially be evaluated in the office. A Proctorio spokesperson said that the service was compliant with FIPPA.

Several students have shifted their attention towards a more general scrutiny of online learning technologies and invigilation methods.

"This is a great opportunity to have a specific, [focused] conversation about alternate assessment strategies, especially surrounding accountability and other concerns around algorithmic test proctoring," wrote AMS VP Academic and University Affairs Georgia Yee.

In a message to *The Ubyssey*, the original author of complaints against Proctorio support expressed regret and support for dialogue.

"I'd just like to say that my post about [Proctorio support], which was just supposed [to] be for comedic purposes, was extremely misleading. I sincerely apologize for that as it was truly immature."

"Aside from the many concerns and worries that Proctorio has brought, it is clear that removal of this program would greatly relieve students of further stress," the user wrote in a follow-up comment on Reddit.

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By Charlotte Alden · Sept. 25, 2020

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By Tianne Jensen-DesJardins · Sept. 25, 2020

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5. **Future co-op housing not off the table as AMS develops housing service**

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The Guardian

This article is more than **2 months old**

CEO of exam monitoring software Proctorio apologises for posting student's chat logs on Reddit

Australian students who have raised privacy concerns describe the incident involving a Canadian student as 'freakishly disrespectful'

Naaman Zhou

Wed 1 Jul 2020 07.27 BST

The chief executive of an exam monitoring software firm that has raised privacy concerns in Australia has apologised for publicly posting a student's chat logs during an argument on the website Reddit.

Mike Olsen, who is the CEO of the US-based Proctorio, has since deleted the posts and apologised, saying that he and Proctorio "take privacy very seriously".

Proctorio is a browser extension-based software that can monitor students through webcams as they take exams from home, and is used by the Australian National University and the University of Canberra, among others. It potentially grants access to a student's webcam, microphone and keystrokes to detect and prevent cheating during an exam.

9/24/2020 CEO of exam monitoring software Proctorio apologises for posting student's chat logs on Reddit | Australia news | The Guardian

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Earlier this year, students from 13 faculty clubs and societies at the ANU wrote to the university to oppose Proctorio, as academics and privacy advocates said it could pose risks to student privacy.

On Friday, an anonymous student at the University of British Columbia in Canada posted on Reddit that a Proctorio support person had gone "MIA [missing in action]" after they messaged with a technical issue during an exam.

Olsen - posting under the Reddit username artfulhacker - then responded with sections of that student's chat log, saying they had "lied".

"If you're gonna lie bro… don't do it when the company clearly has an entire transcript of your conversation," he wrote.

"You even gave Roy [the support person] a positive emoji after he helped you.. shame on you."

Olsen then posted a partial transcript of that student's conversation with the support person. He also commented: "I was furious we would leave a student hanging before an exam, but my team quickly pointed me to the transcript and I just had to jump in." The artfulhacker account has previously posted identifying itself as the CEO of Proctorio.

The student's original post was later marked as "misleading" by a moderator.

However, Ian Linkletter, an employee of the faculty of education at the University of British Columbia, said the posting of the student's support logs was a "privacy invasion" and " a contempt for students that I rarely, rarely see".

Grace Hill, an ANU student and a leader of the group No Proctorio at ANU, told Guardian Australia that Olsen's posting of support logs was "really, freakishly disrespectful".

She said it was hypocritical of Proctorio to say they valued student's privacy when the CEO of the company was posting student chat logs online. "I think it is very concerning and definitely a privacy issue," she said. "It undermines their claims."

Previously, Proctorio has told students that the footage, keystrokes and other data taken during exams can never be accessed by Proctorio staff. The software uses an algorithm to detect movement or suspicious activity, and any data or footage can only be viewed by the university's own "approved administrators and instructors".

A spokesman for the ANU said: "[Data is] only accessible to select ANU staff who have been trained in privacy and who are also subject to both the University's privacy policies and Australian privacy legislation. Proctorio staff cannot access this data. This data will be erased as soon as exams have been finalised."

Olsen did not share any personal or identifying details of the student on Reddit, and did not share any exam information, or video or any information about the student obtained as they sat the exam.

He later apologised for sharing the support logs, saying: "I removed the transcript, you [the student] don't need to prove anything, apologies for posting it."

9/24/2020 CEO of exam monitoring software Proctorio apologises for posting student's chat logs on Reddit | Australia news | The Guardian

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However, Hill said that the posting of support logs showed that "at every step of the way, students seem to be brushed aside and disrespected in the concerns that we have raised".

Previously, Richard Prangell, a board member at Electronic Frontiers Australia, told Guardian Australia there were privacy concerns with Proctorio's monitoring during exams.

"Students should not be expected to install monitoring software on their own computers for the benefit of their university," he said. "There should be a clear division between a student's academic and private life. Keystrokes, screenshots, audio and video can capture all kinds of private, and often unintended information about a student and perhaps even other members of their household."

In April, Proctorio responded to privacy concerns, saying: "Unlike our competitors who collect biometric data, Proctorio never collects anything additional than what the institution has already collected from the student (via single sign-on)."

The company said its software "complies with the strictest data privacy regulations, including Australian, German and European regulations".

The ANU also previously completed a privacy impact assessment for Proctorio that concluded that "no personal information is sent to or held in the system" and "no third parties will have access to or be provided with the personal information."

On Monday, the ANU spokesman did say that the university "would not accept" the company publishing support logs like those shared on Reddit.

"The ANU would not accept any third party publishing support logs or other materials from students or staff that they feel breaches their privacy," he said.

The university confirmed it had used Proctorio for "a small number of invigilated exams at the end of semester one".

A spokesman for Proctorio did not comment in response to questions from Guardian Australia about whether Proctorio has any restrictions or policies on whether employees can publicly share a student's support logs online.

The company told Guardian Australia: "Proctorio would never share any personally identifiable information, of any student, ever. Moreover, Proctorio cannot access any personally identifiable information from our servers, without student consent."

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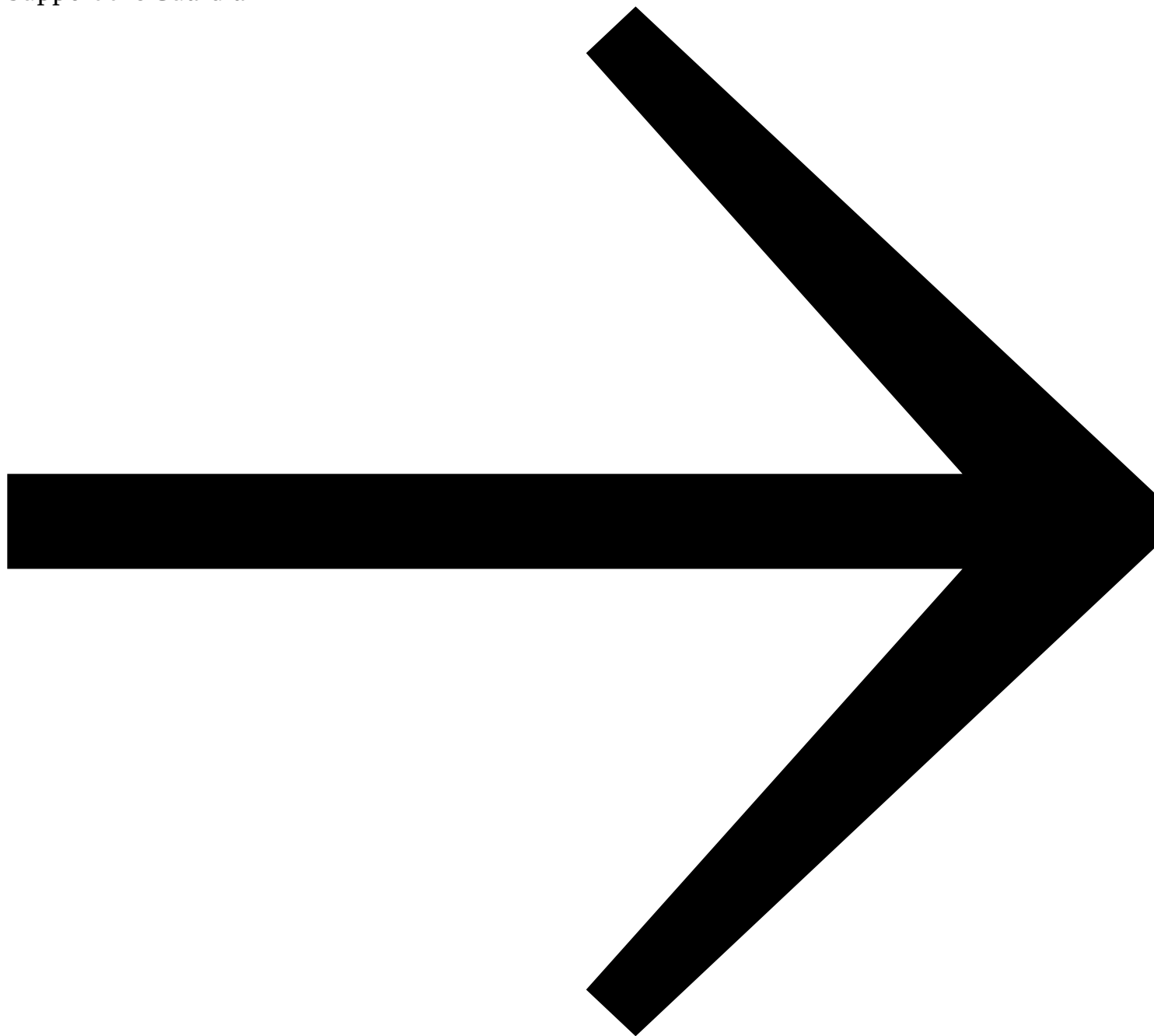
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OPEN LETTER REGARDING THE
USAGE OF PROCTORIO

JUL
14TH

OPEN LETTER REGARDING THE USAGE OF PROCTORIO

July 3, 2020

Dear President Santa Ono, Provost Andrew Szeri, Dr. Simon Bates, and Deans of UBC,

In moving to remote instruction, we recognize how the COVID-19 pandemic has created challenges surrounding the rising incidents of academic misconduct, and we commend the efforts of faculty and teaching staff to produce a quality online teaching experience. We thank all faculty and teaching staff for their unrelenting efforts to provide academic continuity under incredibly difficult circumstances.

With respect to exam invigilation, however, it has become increasingly clear that usage of **Proctorio** negatively impacts students' academic performance, and students have repeatedly expressed that they are not comfortable utilizing this software. While the sudden onset of the pandemic has left instructors with few options but to use Proctorio as a test proctoring software, **its continued usage is not suitable for Summer Term 2 and Fall 2020 on the grounds of unethical corporate practices, reoccurring technical implementation difficulties, and intrinsically discriminatory programming.**

In response to a UBC student claiming that Proctorio had failed to provide support when encountering an issue with a UBC online proctored exam, Proctorio CEO Mike Olsen posted excerpts of a support chat log generating concerns around a privacy breach . It is evident that this is not an isolated incident – this is one of many incidents of Proctorio's poor support response and points to Proctorio's disregard for student privacy and protection of student data. Students report not being able to access their instructors for test-related questions, and being denied access to the exam due to connectivity issues.

Additionally, Proctorio and other algorithmic test proctoring software raise concerns about discrimination against students based on their bodies, external surroundings, and behaviours. Algorithmic test proctoring software has been demonstrated to discriminate against people of colour, students with accessibility needs and medical conditions, trans students, students with connectivity difficulties, and students with children by flagging "abnormal" behaviours and denying access to certain groups of students.

As a result, Proctorio does not reinforce academic integrity, but instead reinforces a discriminatory exclusion and surveillance culture that is detrimental to student learning and test-taking ability. In light of UBC's commitments to equity, diversity, and inclusion and the Inclusion Action Plan's Goal 4.B of "implement[ing] inclusive course design, teaching practice, and assessments," UBC should not be subscribing to a pedagogy of punishment by investing in discriminatory surveillance practices. No student should have their grade put at risk due to biased data algorithms and technical difficulties.

While we understand that Proctorio may not have violated the letter of the law, we contend that the Proctorio CEO's treatment of a UBC student breached the spirit of the law, as well as norms surrounding privacy. The Proctorio CEO's actions further illustrates the wider concerns that students are deeply unsettled by Proctorio's surveillance and have their academic futures put at risk by technical issues. In response to student concerns, Dutch Universities are currently organizing an external technical audit of Proctorio. UBC should follow suit or participate as an observer in the audit process in order to mitigate harm to students. Organizations such as the Algorithmic Justice League currently conduct algorithmic audits, within a human rights framework.

During the past, present, and future – regardless of a pandemic, – students deserve to have fair assessments conducted in good faith by instructors who treat them with a high degree of trust, respect, and dignity. There are many ways to build academic integrity and values of honesty within assessments that do not require Proctorio's unnecessarily invasive surveillance. We recognize and applaud the guidance given in the Guiding Principles for Fall 2020 Adaptations on building academic integrity into the course beyond Proctorio and Turnitin. However, further action must be taken in light of serious student concerns.

The University of British Columbia consistently ranks in the top 50 institutions for higher education, and employs many talented and creative faculty and staff members who are highly capable of designing alternative methods of invigilation. Examples from this past term include breakout rooms on Zoom, examination styles emphasizing applied learning outcomes, as well as invigilation provided by the Centre for Accessibility, to name a few.

We call upon the Senate, the University Administration, and the Deans to implement the following recommendations:

1. UBC must end its relationship with Proctorio and other invasive, algorithmic remote test proctoring software. As Proctorio has shown a disregard for student privacy by releasing student support logs, we call upon UBC to end its contract with Proctorio as the extent to

3.   If choosing to utilize remote proctoring software, UBC instructors must provide low-barrier options to opt out of using remote proctoring software and offer alternate forms of assessment;

4. Incorporating stronger language against the use of Proctorio and remote proctoring software, as well as explanations about concerns regarding Proctorio in the Guiding Principles for Fall 2020 Adaptations;

5.   If choosing to utilize remote proctoring software, UBC instructors must provide a clear rationale for their usage of the software (i.e. invigilation required for professional accreditation programs) and demonstrate their understanding of how it will affect students in a statement of academic integrity expectations within the course syllabi (p15, Guiding Principles for Fall 2020 Adaptations)

6. If continuing with the usage of Proctorio, UBC must conduct an external technical audit of Proctorio's privacy mechanisms in order to mitigate harm to students.

We firmly oppose the use of Proctorio in subsequent academic terms and hope to hold UBC accountable to an ethical and compassionate approach to assessment and education. We hope the University will take a proactive approach by considering our calls to action, and we look forward to hearing from you regarding the implementation of these recommendations.

Signed,

Georgia Yee, Author, AMS Vice President Academic and University Affairs Cole Evans, AMS President and Student Senator
Shivani Mehta, AMS Associate Vice-President Academic Affairs
Justin Zheng, Arts Student Senator

Dayle Balmes, Science Undergraduate Society Vice-President, Academic
Chanel Soo, Land and Food Systems Undergraduate Society Vice-President, Academic Golzar Doroudi, Nursing Undergraduate Society Vice-President, Academic
Aadhya Mittal, Arts Undergraduate Society Vice-President, Academic
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Jacob Power, Engineering Undergraduate Society, Vice-President, Academic
Emma Dodyk, Engineering Undergraduate Society, President
Cameron Lee, Kinesiology Undergraduate Society Vice-President, Academic

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3 Bajaj, Maneevak, Li, Jessica (April 4, 2020). "Students, faculty express concerns about online exam invigilation amid COVID-19 outbreak"; The Ubyssey

4 Fishleigh, Ellie (June 16, 2020). "American Remote Invigilation Software Being Used For UK Exams: Proctorio's Crib Sheet"; TechRound

5 Swauger, Shea (April 2, 2020). "Our Bodies Encoded: Algorithmic Test Proctoring in Higher Education" ; Hybrid Pedagogy

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Principles for appropriate use of remote invigilation tools

Preamble

With the move to (mostly) online teaching and learning, a number of courses have begun to use software that can support the invigilation of exams remotely. The principles in this document were developed by a working group[1] of students, faculty, and staff to provide guidance on the appropriate use of such tools as one of several approaches to supporting academic integrity.

As with the high-level **Guiding Principles for Fall 2020**, we start from the foundation that decisions about how to adapt courses for an online environment should be grounded in care and compassion for everyone involved in teaching and learning, including students, faculty, TAs, and staff. These principles also focus on transparency, keeping students informed about the purpose and functionality of remote invigilation tools, and recognize that accessibility and flexibility are key, as not all students will have access to what is required to use these tools.

Students have expressed significant and reasonable concerns about some forms of remote invigilation, especially the use of Proctorio.[2] Due to technical difficulties, equity concerns, privacy concerns, ethical concerns and more (as discussed below), students have experienced additional levels of stress when writing examinations. These concerns should be taken seriously and addressed to the greatest extent possible in decisions about whether and how to use such tools. At the same time, there are important reasons for using remote invigilation tools in some courses and programs, such as for accreditation requirements, and to promote academic integrity.

Academic integrity is for the collective benefit: It supports the value and integrity of a UBC degree for students, the university, and those outside the institution. Though academic integrity can be supported in multiple ways, some of which are discussed below, invigilation of exams taken online can, in some cases, be a necessary part of a suite of efforts. **We recommend considering other approaches to academic integrity first, however, and limiting the use of remote invigilation tools where possible.**

THERE ARE THREE CENTRALLY-SUPPORTED SOFTWARE TOOLS FOR REMOTE INVIGILATION AT UBC:	▪ **Proctorio** ▪ **Respondus Lockdown Browser** ▪ Invigilation through **Zoom**

---

[1] Membership Dante Agosti-Moro, Steven Barnes, Simon Bates, Kieran Forde, Christina Hendricks, Shivani Mehta, Stephen Michaud, Peter Ostafichuk, Catherine Rawn, Chanel Soo, Qian Wang, Greg Werker, Georgia Yee, Justin Zheng

[2] Facing student privacy concerns, UBC maintains relationship with Proctorio https://www.ubyssey.ca/news/ubc-maintains-proctorio-relationship/

The principles below apply to all of these tools (as well as others that may be used in particular Faculties), but most are related to Proctorio. Proctorio is one approach to addressing concerns around identity verification, preventing the use of prohibited materials, the receipt of unauthorized assistance, and unauthorized duplication of exam materials. However, it is important to recognize that Proctorio, like any other tool, cannot entirely solve these issues; there are ways to get around the controls of any tool. While recognizing that the vast majority of students will not resort to such measures, raising student awareness of academic integrity in the context of remote exams can help to inhibit low-effort, and possibly unintentional, breaches.

Principles

The foundation of these principles is the same as the first high-level guiding principle on the **Guiding Principles for Fall 2020 document**: "Approach course adaptation decisions with a commitment to compassion and care for everyone involved." This includes focusing on how decisions impact wellness, including that of students, TAs, faculty, and staff. With that in mind, we offer the following principles:

1.0

Take students' concerns about remote invigilation seriously and weigh them carefully in the decision of whether to use these tools or not, which tools to use, and how they are implemented (e.g., through instructor-controlled settings).

a) Remote invigilation tools can lead to added stress for students beyond what they might otherwise experience in an in-person exam, which can affect their performance. For example, with Proctorio (or tools with similar functionality), worries about being 'flagged' for behavior that may be acceptable in an in-person exam (e.g., looking away to think or use scratch paper, going to the washroom), or that aren't under one's control (e.g., students having to work in spaces where family members are making noise in the background or technical problems during timed exams) can add significant additional stress during an exam.

b) Having cameras (and sometimes microphones) on during an exam, while students are in their living spaces, also raises privacy concerns since instructors and other students wouldn't otherwise be able to see these spaces or hear what is happening in them.

c) Consider how remote invigilation tools may create additional barriers and introduce inequities in the online learning atmosphere. Algorithmic remote proctoring software may disproportionately flag students with disabilities and health needs and students with dependents. In addition, there may be access issues for students in rural communities with limited internet access, and students of ethnic backgrounds that differ from the data set the algorithm is based off of may face difficulties entering exams. Refer to Principle 10 regarding supporting students who are not able to use the tool due to accessibility issues. Take students' concerns seriously to foreground equitable and accessible assessment methods.

2.0

Take a balanced approach to maintaining academic integrity rather than only focusing on enforcement, including:

a) Have meaningful conversations with students around the importance of academic integrity.

b) Always assume learning is the key goal rather than that students will make every attempt to engage in academic misconduct when they can.

c) Learn about ways to re-design courses and assessments to promote integrity and reduce or eliminate the need for remote invigilation. One-on-one consultations with learning designers at the CTLT are available through the **Online Teaching Program**, and they can help provide suggestions and advice for redesigning assessments for specific courses. See also:
   - High-level principle 5 in the **Guiding Principles for Fall 2020 courses** document
   - **Alternatives to remotely proctored exams** on the Keep Teaching website, including a longer guide to **Alternatives to In-Person Exams**.
   - **CTLT's Online Teaching Program** (OTP) module on assessment, and resources from a **workshop on academic integrity** during the OTP
   - Video of **workshop from UBC Skylight on academic integrity**
   - **Suggestions from the Remote Assessment Guidebook** (Peter Ostafichuk, UBC)
   - **Academic Integrity Faculty Resources** (multiple UBC authors, UBCV Learning Commons)
   - E-CORE **Guide to Academic Integrity in Remote, Un-proctored Exams** (**Engineering Collaboration for Online and Remote Education**, Canadian Engineering Education Association)

3.0

Carefully consider whether any alternatives for promoting academic integrity can meet the needs of your course before deciding to use tools for remote invigilation. While such tools may be used to fulfill accreditation requirements in some programs, where this is not the case, prioritize using alternatives where possible. Consider asking students for suggestions on how to promote academic integrity, and see 2(c) above for resources that discuss alternatives, such as:

a) Redesigning assessments so that students must synthesize and apply information rather than only recall it; this may allow for exams to be "open book"

b) Reducing reliance on high-stakes exams in favour of multiple smaller-stakes assessments

c) Discussing with students why academic and scholarly integrity is important, how it works in your discipline, and how they are joining a scholarly community that is guided by integrity principles

d) Sharing with your students a new UBC module on Canvas, **Introduction to Academic Integrity** (link to enroll in the module on Canvas)

4.0

The decision to use remote invigilation tools, as well as the responsibility to communicate the rationale for doing so and how they work, should not be left to TAs; this must be done by the instructor(s), course coordinator(s), department heads, or others responsible for the design and / or delivery of the course.

5.0

If remote invigilation tools are to be used in a course, this should be stated in the syllabus, with a rationale provided for why that approach and tool was chosen. An explanation of pedagogical choices is always valuable, and this allows students who do not wish to use tools like Proctorio to drop the course if they can. Be sure to return to this rationale in communications to students throughout the term, particularly shortly before exams.
Some example language is provided below, with further examples in Appendix 1.

SAMPLE PARAGRAPH FOR SYLLABUS: This course uses Proctorio for Midterm #1, Midterm #2, and the final exam. This tool was chosen in order to address accreditation requirements and maintain academic integrity for tracking academic progress of individual students. For more information, please refer to the **UBC Proctorio Student Guide.** If you require accommodations for accessibility needs or technical/connectivity issues, please contact the Centre for Accessibility or your Enrolment Services Advisor.

6.0

Schedule a practice test using the tool before the drop deadline, to allow students a chance to test whether they have the necessary equipment and network capability and to get familiar with the process. See the Proctorio Instructor Guide for more suggestions on practice exams using Proctorio.

7.0

Be sure to schedule enough time for setup and possible technical issues during an exam with remote invigilation tools. As noted on the **UBC Proctorio Instructor Guide,** let students know that you will add extra time to the "time limit" setting (the amount of time students will have to complete the exam once they start), and at least 30 minutes to the "available from/until" setting (the amount of time the exam will be open until it auto-submits).

a) Include language about how students can get support outside of Proctorio or Lockdown Browser, such as if they have questions about interpretation of exam content or an impactful typo in a test question, for which students may need real-time support. Who do students contact and how quickly can they get the answers they need?

8.0

For remote invigilation through videoconference (e.g., Zoom), students must not be asked to show their ID card with their full student number, since each student can see all others in the room. An alternative is to ask them to hold up their card to the camera with the first half of the number covered. UBC Skylight has detailed **guidance for invigilating exams using Zoom**, including several options for identity checks.

9.0

Explain to students as clearly as possible what the tool does and what that means for them during and after an exam. Focus on providing information in order to reduce stress where possible. For example, for Proctorio:

a) Share with students the **UBC Proctorio Student Guide**, and information and instructions in the Instructor template in the **UBC Proctorio Instructor Guide** (which covers some of the suggestions below).

b) Proctorio offers a range of settings; choose the least restrictive settings that will fulfill the needs of the course. Be sure to follow the recommendations listed in the UBC Proctorio Instructor Guide for settings to disable, as enabling these settings can cause technical issues for students during exams.

    NB: Ensure "Re-entry" is allowed in settings. If technical or connectivity issues disrupt a student's ability to complete the exam (e.g., connection drops, computer shuts down, etc.), only Proctorio staff (and only if "re-entry with agent" has been selected by the instructor) can reset the exam and allow a new attempt. Prepare to provide support if a student encounters difficulty re-entering the exam, and be sure to let students know whom to contact and how to help them re-enter if needed.

c) Explain to students:

    • Proctorio is FIPPA compliant, all recordings are stored in Canada, and the encrypted recordings will be deleted after two years.

    • Only instructors (and/or TAs, depending on what is the case for your course) have access to watch the video; as noted on the **UBC Proctorio Instructor Guide**, "no person at Proctorio can access the recordings or data, as they are stored using zero-knowledge encryption, meaning Proctorio does not have the key to decode the encryption."

    • What a "flag" on the video means, and that any flags must be reviewed by the instructor (and/or TA) before any interpretation is made of the flagged behaviour. Remind your students that, even if their file is flagged as suspicious, it doesn't mean suspicious in terms of cheating; it just means suspicions in terms of the enabled Proctorio settings (e.g. unusual sound, movement etc.). Assure students that Proctorio does not make determinations of academic misconduct. If the course instructor suspects there is sufficient information that academic misconduct has been committed (e.g. using prohibited materials or discussing the exam with another person), **the normal UBC policies** apply and an investigation is initiated before any determination is made.

- As noted in the **UBC Proctorio Instructor Guide** "Share your expectations with students about what usual behavioural activities you will anticipate and accept…, such as fidgeting, stretching, not looking directly at the exam the whole time, etc."; and "Clarify procedures around washroom breaks, using scratch paper, or any other needs specific to your course." Many students are understandably worried that they will be flagged for behaviours that appear suspicious but are actually incidental to writing the exam or out of their conscious control. It is important that you explain to them how Proctorio works and reassure them by explaining the post-exam review process.

- Note that when students log into Proctorio, they may get a message from the software that is not necessarily aligned with what the instructor has told them about what they can and cannot do during the exam. Explain to students that where there is conflicting guidance between the instructions provided by the instructor and Proctorio, the instructor's instructions/requirements take precedence.

10.0

Be sure students know what to do if they cannot use a remote invigilation tool because of technical, geographical, accessibility, or other reasons. Pay attention to the Assignments and Assessments page on the **Keep Teaching website** for details and updates on technical and other requirements for using these tools.

a) Students who are having trouble meeting the hardware or network requirements for the invigilation tool should discuss possible alternative assessment options with their instructors

b) Students experiencing financial barriers to meeting requirements can speak to an **Enrolment Services Advisor**

c) Students with disabilities should contact the **Centre for Accessibility** to find out if they are eligible for online exam accommodations

d) Tool-specific help resources:

  - Proctorio: see p. 6 of the **UBC Proctorio Student Guide**, which provides information on how to get real-time help during an exam, as well as outside of exam times.
  - Lockdown Browser: See the **Lockdown Browser tool guide** on the LT Hub website
  - Zoom: **UBC's Zoom Instructor Guide** and **Zoom Student Guide**; see also UBC Skylight's instructions for **using Zoom for exam invigilation**

11.0

Those who are going to be reviewing videos from Proctorio should be aware of good practices for doing so, including recognizing that some students may be flagged more than others due to things such as their home situations (e.g., living with young children) or health considerations (e.g., needing to get up to use the washroom often). Support and arrangements for disseminating these good practices will vary but can include local expertise (faculty / staff who have used proctored assessments), faculty-based or central support or resources. If TAs are reviewing the videos, instructors should ensure they have this information as well.

Appendix

AMS of UBC (July 2020); **Open Letter Regarding the Usage of Proctorio**.
UBC **Letter to the Community regarding Proctorio**

Sample syllabus regarding remote invigilation

01

Utilize wording / information from the Proctorio Instructor Guide

02

Sauder have provided information at 3 different points for their PMBA program:

1. Program Opening/Orientation: the School gives verbal introduction to online exams and Proctorio

2. When first courses begin: the program office posts an "Introduction to Proctorio" announcement on the cohort's Canvas site

As mentioned at Residency 1, your PMBA final exams will be proctored online by a service called Proctorio Secure Exam, embedded in Canvas. Proctorio is used across UBC to proctor online exams, and is fully compliant with BC's Freedom of Information and Protection of Privacy Act (FIPPA). During exams, it will record your screen, webcam, and microphone, and produce a report for RHL to review following the exam.

Please be aware that prior to taking the exam, Proctorio will ask for permission to access your webcam and microphone, and that you will need to disable firewalls/malware detection programs on your computer. You may also notice high CPU usage while Proctorio is running – this is normal. After each exam, you may uninstall Proctorio if you wish. In order to prepare to take your exam, you must complete a Technical Check practice exam located here, so that you can test your equipment to ensure that it is ready for the exam day, and so that you can get the full experience of taking the exam (instructions are below).

03

Prior to an exam, the instructor posts on their Canvas course site a reminder about Proctorio

As you know, the BABS 550 final exam will take place on <date & time>. The exam will be 125 minutes long. You will be taking this exam remotely from a location of your choice, and your exam will be proctored online by a service called Proctorio Secure Exam. Proctorio is embedded in Canvas, and will record your screen, webcam, and microphone.

Here are the exam rules:

• This exam is open book: multiple monitors will be allowed. Blank sheets of paper, pen/pencil, calculators, physical notes, textbooks, and external websites are all allowed. You may not communicate with anyone during this exam. Proctorio will also enforce a room scan, where you will need to rotate your webcam 360 degrees to record your testing environment. Note: the room scan will occur at the beginning of the exam, and we have provided an additional 5 minutes of exam time to account for this.

• You may take bathroom breaks during the exam. Please announce (by speaking out loud) your intention to take a bathroom break before leaving the room and be aware that time spent outside of the examination room should not exceed 5 minutes.

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Keep Teaching

KEEP TEACHING

Preparing to Teach in Fall 2020: Guiding Principles

As UBC looks ahead to 2020 Winter Term 1, the university is working to support all educators in successfully adapting courses for online delivery, while continuing to offer learning experiences for our students that are as high quality as possible.

At the broadest level, we strive to offer an equitable experience to all students enrolled in our courses. This means minimizing and mitigating against barriers to their access and success caused by adaptations to interim online remote teaching in response to the global pandemic.

In order to address this, more than 100 faculty and a number of student leadership organizations from across UBC Vancouver were invited by the Office of the Provost & Vice-President Academic to think through some of the widespread, pressing issues in course design and delivery.

The resulting Guiding Principles for Fall 2020 offer guidance and suggestions for designing and teaching courses online. This includes six high-level guiding principles, accompanied by implications for instructors, for UBC, for faculty and for programs. This is supported by six summary reports, each

on a specific area of focus.

The guidelines and recommendations are comprehensive thanks to the deep commitment, enthusiasm, and expertise brought by the contributors.

The six guiding principles, a summary of the implications for instructors and the areas of focus are explained below. You can also download the full Guiding Principles document (PDF, 60 pages) or an editable Word version of the principles.

High-Level Guiding Principles

The implications noted under each of the following high-level guiding principles are intended to prompt careful and thorough consideration, rather than prescribe specific approaches or solutions with limited applicability.

To learn more about each recommendation and a summary of the implications for instructors, expand the sections below. The full recommendations, including implications for UBC, faculty and programs, are available in the full report download above.

> **1. Approach course adaptation decisions with a commitment to compassion and care for everyone involved.**

> **2. Use Course and Program-Level Learning Objectives to guide decisions about where to invest time and effort.**

> **3. Accommodate the reality that access to technology, including hardware and internet access, will vary across students in your courses.**

> **4. Explore ways to adapt your course design and delivery to take advantage of the flexibility made possible by online learning while cultivating a strong, inclusive, online learning community.**

> 5. Consider various ways to foreground and address academic integrity.

Academic integrity is often discussed in terms of what not to do, and we know from the research literature that breaches such as cheating and plagiarism are most typically the result of feelings of desperation plus opportunity. Another approach to academic integrity is to invite students into the community of scholars, as a way to discuss the values associated with a scholarly community when creating and sharing knowledge.

Implications of this Principle for Instructors

- Consider adaptations to assessments to minimize both student desperation and opportunity. This could include lower weighting or regular mini-quizzes on foundational factual knowledge (i.e., that which can be looked up easily) and reserving greater weight for multi-phase scaffolded and personalized assignments.

- Carefully weigh the pros and cons of using remote proctoring software such as Proctorio, in light of practical and ethical concerns such as hardware accessibility and student privacy.

- Explicitly discuss and model how academic integrity is a crucial part of participating in an academic/scholarly community aimed at knowledge creation, including how you manifest integrity in your own work and your expectations for them.

- Form a purposeful statement of expectations around academic integrity in an online space, specific to the course, presented to students in the course syllabus at the beginning, and discussed with them in the first sessions of the course.
  - Revisit the statement throughout the course. Keep integrity top of mind by including a brief question on each assignment asking students to reflect on how it relates to academic integrity.

- Embed assessments of meta-cognition, which help students reflect on how they know what they know, while simultaneously revealing insufficiencies. Examples include exam wrappers and (group) oral exams.

- Consider carefully the implementation and use of academic misconduct detection mechanisms in online assessments. Seek clarity on Departmental/Faculty policy and procedures on reporting academic misconduct.

- See the Chapman Learning Commons resource for faculty on academic integrity for

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more information.

> 6. Consider implications for student progression.

Areas of Focus

[Active Engagement in Discussion/Lecture Courses (PDF)](#)

[Reimagining Large-Class Instruction (PDF)](#)

[Recommendations for Laboratory Education (PDF)](#)

[Experiential Education Online (PDF)](#)

[Academic Delivery in the Health Professional Programs for the 2020 Winter Session (PDF)](#)

[Guidelines for the Role of Teaching Assistants in the COVID-19 Context (PDF)](#)

[Principles for Remote Invigilation (PDF)](#)

Next:

[Get Started](#)

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FACULTY RESOURCES FOR ACADEMIC INTEGRITY

These resources have been created and curated by the Okanagan campus's Academic Integrity Working Group and are intended to be of support to assist Faculty as they develop syllabi and assessments for the term, especially in the recent shift to an online context. The working group is grateful for our collaborations with faculty, staff, and students from both the Vancouver and Okanagan campuses to develop and share these resources for everyone's use.

Please note, this page is a living document and will be updated as the year progresses.

SUGGESTED SYLLABUS LANGUAGE FOR ACADEMIC INTEGRITY ISSUES

This document contains information that we encourage instructors to consider including in their course syllabi for the upcoming academic year. These are not mandatory statements, but if included, would help to ensure consistency in our course syllabi across campus and provide clarity for students. Please modify the statements as necessary to be consistent with your course structure and requirements. Regardless of how the language is adapted for your particular course needs, **it is important that all expectations are stated at the beginning of the course and are repeated prior to each assessment.** We highly encourage instructors to include similar statements on relevant academic integrity considerations in their assessment descriptions. To help organize your course content and ensure clear communication for students, feel free to use the Canvas course template found here. (https://ctl.ok.ubc.ca/teaching-remotely/ubc-okanagan-canvas-template/)

Suggested Language for Midterms and Examinations	⌄
Suggested Language for Instructor Availability and Technical Issues During Examinations	⌄
Suggested Language for Plagiarism Detection Tool Software	⌄

SUGGESTED COMPONENTS TO INCLUDE FOR ONLINE LEARNING: TECHNICAL ISSUES

The following statements pertain to technical issues in an online learning environment that may impact academic integrity indirectly. These statements may or may not pertain to your course directly. All language is suggested and can be modified as the instructor deems appropriate. Providing information related to technical issues will help students maintain academic integrity and succeed in their studies.

Suggested Language for Technology Required	⌄
Suggested Language for Blended Learning Environments & Attendance	⌄
Suggested Language for Communication Procedures	⌄
Suggested Language for Technical Support Resources for Students	⌄

EXTERNAL RESOURCES

- UBC Vancouver: Principles for appropriate use of remote invigilation tools (https://provost-new.cms.ok.ubc.ca/wp-content/uploads/sites/115/2020/09/UBCVancouver_principlesforRemoteInvigilation_20200904.pdf)

  Added September 8, 2020: This document was developed by our Vancouver Campus colleagues through numerous consultations across UBC including at the Okanagan campus. This version has been modified in four places to include links to UBC Okanagan student-related services and a link to a UBC Okanagan

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(https://twitter.com/ananyareed)

THE UBYSSEY

AMS suggests faculty not use Proctorio, remote invigilation tools in guidelines

Written by Kathryn Helmore

Oct. 5, 2020 · 4 min read

"There are a lot of legitimate concerns with the use of these platforms." *File Kristine Ho*

After months of controversy surrounding privacy and equity issues with Proctorio, the AMS in July released guidelines suggesting instructors do not use remote invigilation tools including Proctorio when possible.

Instructors adopted Proctorio and other exam invigilation softwares following cancellations of in-person exams in March. Controversy arose in June when the CEO of Proctorio publicly posted

The AMS guidelines recommend that instructors consider approaches to academic integrity that do not involve remote invigilation tools and assume that learning, not academic misconduct, is a student's objective. The guidelines suggest redesigning courses and assessments to reduce or eliminate the need for remote invigilation.

"[Instructors should] have meaningful conversations with students about the importance of academic integrity," reads the guidelines. AMS VP Academic and University Affairs Georgia Yee did not provide comment after multiple requests.

Instructors should consider student concerns, the guidelines say.

"Consider how remote invigilation tools may create additional barriers and introduce inequities in the online learning atmosphere," reads the report. "Algorithmic remote proctoring software may disproportionately flag students with disabilities and health needs and students with dependents."

The report asks instructors to consider the added stress from having cameras in living spaces.

If invigilation tools are used in the course, the guidelines say this should be stated in the syllabus alongside a rationale, and that it is the duty of the instructor, not TAs, to communicate this rationale — and what the tool does — to the class.

Remote invigilation as 'insurance'

UBC has also released its principles for remote invigilation tools addressing student Proctorio concerns. "We recommend considering other approaches to academic integrity first, however, and limiting the use of remote invigilation tools where possible," the report reads.

Yee said in a September 28 Reddit post that UBC's principles were "not enough."

Simon Bates, associate provost of teaching and learning, said in an emailed statement that the intention of the guidelines was to help faculty make informed decisions about ways to ensure academic integrity, noting that invigilation tools like Proctorio is one option.

support units) is to support, advise and consult," said Bates.

Jason Woywada, Executive Director of the BC Freedom of Information and Privacy Association, recognizes the academic integrity challenges post-secondary education faces.

"Post-secondary administrators and educators must provide testing that is fair, accurate and without cheating," said Woywada. "When delivering tests remotely, these tools are a way for them to provide this insurance."

However, Woywada noted that tests can be invasive. The key to ethically using the software lies in knowing and understanding its settings and how they work — something that instructors should be trained on, he said.

"Any of these programs can be privacy compliant or intrusive depending on the settings," said Woywada. "And that's why there are so many issues with these prospective programs. The questions are, how do we ensure that we know what these settings are? And how do we give consent?"

According to UBC's Proctorio Student Guide, Proctorio complies with the provincial Freedom of Information and Protection of Privacy Act: it stores all recordings in Canada with zero-knowledge encryption, meaning that the company does not have the key to decode the encryption. Additionally, only teaching staff have access to watch the videos.

UBC offers a Protorio instructor guide with a section explaining Proctorio behaviour settings. According to Bates, UBC offers tutorial instruction for faculty, and in-person assistance is available through the Centre for Teaching, Learning and Technology and local faculty instructional support units.

UBC's Proctorio student guide gives further details to students on Proctorio settings in addition to advice on preparing for remotely invigilated exams.

"There are a lot of legitimate concerns with the use of these platforms," said Woywada. "They need to be thought out. There needs to be meaningful consent. That is the key thing."

SUGGESTED ARTICLES

THE UBYSSEY

How to transform your home study space into the cafe you used to study at

By Tianne Jensen-DesJardins · Oct. 5, 2020

Campus and Community Planning propose new faculty staff rental building in Wesbrook Place

By Paige Mayo · Oct. 5, 2020

THE UBYSSEY

What your Zoom camera angle says about you

By Tait Gamble · Oct. 3, 2020

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PROCTORIO, INCORPORATED

6840 E. Indian School Road, Suite 200, Scottsdale, Arizona 85251

SOFTWARE-AS-A-SERVICE AGREEMENT
COVER PAGE

The attached documents describe the relationship between Proctorio, Incorporated ("*Company*") and the customer identified below ("*Customer*") (each of Company and Customer, a "*Party*" and collectively the "*Parties*"). The documents attached to this cover page ("*Cover Page*") will consist of the document entitled "Terms and Conditions" (the "*SaaS Terms*") and any schedules attached thereto, which describe and set forth the general legal terms governing the relationship (collectively, the "*Agreement*").

This Agreement will become effective when this cover page is executed by authorized representatives of both Parties (the "*Effective Date*").

CUSTOMER INFORMATION:

Name/Customer:	The University of British Columbia	Principal Contact Person: Fred Levinsky
Address:	Financial Operations	Title: Senior Procurement Officer
	TEF 3 Building 5th Floor	Phone: 604-822-1963
	6190 Agronomy Road	Fax:
	Vancouver, BC V6T 1Z3	Email Address: fred.levinsky@ubc.ca

Billing Contact:

Title:

Phone:

Fax:

Email Address:

Initial Term: One (1) year term, commencing on February 1, 2018 to February 1, 2019, plus a one (1) year option to renew at a fixed price.

FOR INTERNAL COMPANY USE ONLY:

Contract #: _____   □ Professional Services Addendum

The Parties have caused their duly authorized representatives to execute this Agreement as of the dates set forth below.

CUSTOMER: The University of British Columbia   **PROCTORIO, INCORPORATED**

By (Signature): *Fred Levinsky*
BF6DBBB05AD0476...

By (Signature): *Jon Lacivita*
06A357682E0E484

Name (Printed): Fred Levinsky

Name (Printed): Jon Lacivita

Title: Senior Procurement Officer

Title: VP of Business Development

Date: February 1, 2018   3/4/2018

Date: 3/5/2018

This is Exhibit AK referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

PROCTORIO, INCORPORATED
SOFTWARE-AS-A-SERVICE AGREEMENT
TERMS AND CONDITIONS

1. DEFINITIONS.

Certain capitalized terms, not otherwise defined above, have the meanings set forth or cross-referenced in this Section 1.

1.1 "*Application Documentation*" will mean text and/or graphical documentation, whether in electronic or printed format, that describe the features, functions and operation of the Application Service, ("functionality") whether such functionality is provided in a scheduled release, an Update or an Upgrade which materials are designed to facilitate use of the Application Service and which are provided by Company to Customer in accordance with the terms of this Agreement.

1.2 "*Application IP*" will mean the Application Service, the Application Documentation, and any and all intellectual property provided to Customer (and/or any applicable Authorized End Users) in connection with the foregoing.

1.3 "*Application Service*" will mean the technology and application software set forth and described on Schedule A.

1.4 "*Authorized End User*" shall mean, collectively, (i) employees, agents, or contractors of Customer ("*Customer's Users*") accessing or using the Application Service through the Web Interface, under the rights granted to Customer pursuant to this Agreement; and (ii) Student Users (as defined in Section 1.8 below). The number of Authorized End Users is as set forth and described on Schedule A.

1.5 "*Confidential Information*" will mean all written or oral information, disclosed by either Party to the other, related to either Party or a third party that has been identified as confidential or that by the nature of the circumstances surrounding disclosure ought reasonably to be treated as confidential. Without limiting the foregoing, for purposes of this Agreement, the Application Documentation will be deemed Confidential Information of Company.

1.6 "*Customer Content*" will mean the data, media and content provided by Customer, Customer's Users and/or Student Users through the Application Service, including derived data generated by the Customer in the use of the Application Service.

1.7 "*Customer's Users*" shall have the meaning set forth in Section 1.4 above.

1.8 "*Student Users*" will mean those students of Customer to which Customer grants access to use the Application Service through a Web Interface, under the rights granted to Customer herein and pursuant to an agreement between Customer and Customer's students.

1.9 "*Web Interface*" will mean the website or websites through which Customer's Authorized End Users may access the Application Service in accordance with the terms of this Agreement.

2. ACCESS AND USE.

2.1 Provision of Access. Customer desires to engage Company to provide access to the Application Service as a proposed proctoring solution. Subject to the terms and conditions contained in this Agreement, Company hereby grants to Customer a non-exclusive, non-transferable right to access the features and functions of the Application Service during the Term (as defined below), solely for use by Authorized End Users in accordance with the terms and conditions herein. Further subject to the terms and conditions contained in this Agreement, Company grants Customer access herein to the features and functions of the Application Service during the Term to allow Customer to respond to potential academic challenges that occurred during the Term. Such use shall be limited to use of the Application Service for proctoring purposes only, and solely for the number of Authorized End Users

permitted by Schedule A. As soon as reasonably practicable after configuration of the Application Service and the completion of any necessary modifications agreed between the Parties under a Professional Services Addendum, Company shall provide to Customer the necessary passwords and network links or connections to allow Customer to access the Application Service (the "*Access Protocols*"). Company shall also provide Customer the Application Documentation to be used by Customer in accessing and using the Application Service. To the extent Company maintains lists or logs of click stream data ("**Clickstream Data**") generated by Authorized End Users using the Application Service, Customer may request that Company provide Customer with access to that Clickstream Data. Customer acknowledges and agrees that Company has no obligation or responsibility to maintain Clickstream Data, and that it does not provide any Clickstream Data mapping services. Customer acknowledges and agrees that, as between Customer and Company, Customer shall be responsible for all acts and omissions of Authorized End Users, and any act or omission by an Authorized End User which, if undertaken by Customer, would constitute a breach of this Agreement, shall be deemed a breach of this Agreement by Customer. Customer shall undertake reasonable efforts to make all Authorized End Users aware of the provisions of this Agreement as applicable to such Authorized End User's use of the Application Service, and shall cause Authorized End Users to comply with such provisions.

2.2 Application Documentation License. Subject to the terms and conditions contained in this Agreement, Company hereby grants to Customer a non-exclusive, non-transferable right and license to use the Application Documentation during the Term for Customer's internal purposes in connection with its use of the Application Service as contemplated herein.

2.3 Usage Restrictions. Customer will not, and will not permit any Authorized End Users to, (i) copy or duplicate any of the Application IP; (ii) decompile, disassemble, reverse engineer or otherwise attempt to obtain or perceive the source code from which any software component of any of the Application IP is compiled or interpreted, or apply any other process or procedure to derive the source code of any software included in the Application IP, or attempt to do any of the foregoing, and Customer acknowledges that nothing in this Agreement will be construed to grant Customer any right to obtain or use such source code; (iii) modify, alter, tamper with or repair any of the Application IP, or create any derivative product from any of the foregoing, or attempt to do any of the foregoing, except with the prior written consent of Company; (iv) interfere or attempt to interfere in any manner with the functionality or proper working of any of the Application IP; (v) remove, obscure, or alter any notice of any intellectual property or proprietary right appearing on or contained within any of the Application IP; or (vi) assign, sublicense, sell, resell, lease, rent or otherwise transfer or convey, or pledge as security or otherwise encumber, Customer's rights under Sections 2.1. Customer will not use any of the Application IP except in compliance with Company's obligations to any third party with respect thereto incurred prior to the Effective Date, including without limitation complying with those terms set forth on Schedule B, provided that Company has notified Customer of such obligations. Customer will ensure that its use of any of the Application IP complies with all applicable laws, statutes, regulations or rules and will not use or compile any of the Application IP for the purpose of any illegal activities.

2.4 Retained Rights; Ownership. As between the Parties, subject to the rights granted in this Agreement, Company and its licensors retain all right, title and interest in and to the Application

IP and its components and any data provided by Company through the Application Service, and Customer acknowledges that it neither owns nor acquires any additional rights in and to the foregoing not expressly granted by this Agreement. Customer further acknowledges that Company retains the right to use the foregoing for any purpose in Company's sole discretion. As between the Parties, Company acknowledges and agrees that Customer retains all right, title, and interest in and to all Customer Content and hereby grants to Company a non-exclusive, worldwide right and license to use, copy, manipulate and render such Customer Content through the Application Service for the purposes of providing and improving the Application Services.

2.5 Feedback. If Customer sends or transmits any communications, comments, questions, suggestions, or related materials to Company, whether by letter, e-mail, telephone, or otherwise ("*Feedback*"), suggesting or recommending changes to the Application IP, including, without limitation, new features or functionality relating thereto, all such Feedback is, and will be exclusively owned by Company. Customer hereby assigns all right, title, and interest in, and Company is free to use, without any attribution or compensation to Customer, any ideas, know-how, concepts, techniques, and all applicable intellectual property rights relating to the Feedback, whether or not patentable, for any purpose whatsoever, including but not limited to, developing, manufacturing, having manufactured, licensing, marketing, and selling, directly or indirectly, products and services using such Feedback. Customer agrees and understands that Company is not obligated to use, display, reproduce, or distribute any such ideas, know-how, concepts, or techniques contained in the Feedback, and Customer has no right to compel such use, display, reproduction, or distr bution.

2.6 Suspension. Notwithstanding anything to the contrary in this Agreement, Company may temporarily suspend Customer's and any Authorized End User's access to any portion or all of the Application IP if (i) Company reasonably determines that (a) there is a threat or attack on any of the Application IP; (b) Customer's or any Authorized End User's use of the Application IP disrupts or poses a security risk to the Application IP or any other customer or vendor of Company; (c) Customer or any Authorized End User is/are using the Application IP for fraudulent or illegal activities; (d) subject to applicable law, Customer has ceased to continue its business in the ordinary course, made an assignment for the benefit of creditors or similar disposition of its assets, or become the subject of any bankruptcy, reorganization, liquidation, dissolution or similar proceeding; or (e) Company's provision of the Application Service to Customer or any Authorized End User is prohibited by applicable law; or (ii) any vendor of Company has suspended or terminated Company's access to or use of any third party services or products required to enable Customer to access the Application IP (each such suspension, in accordance with this Section 2.6, a "*Service Suspension*"). Company will make commercially reasonable efforts, circumstances permitting, to provide written notice of any Service Suspension to Customer (including notices sent to Company's registered email address) and to provide updates regarding resumption of access to the Application IP following any Service Suspension. Company will use commercially reasonable efforts to resume providing access to the Application Service as soon as reasonably possible after the event giving rise to the Service Suspension is cured. Company will have no liability for any damage, liabilities, losses (including any loss of data or profits) or any other consequences that Customer or any Authorized User may incur as a result of a Service Suspension pursuant to Section 2.6(i).

3. CUSTOMER OBLIGATIONS.

3.1 Authorized End User Access to Services. Subject to the terms and conditions herein, Customer may permit any Authorized End User to access and use the features and functions of the Application Service. Customer will ensure that any such Authorized End User will be bound by a contractual, enforceable

agreement, which agreement, will, by its terms, provide substantially the same or greater protections for Company's Confidential Information and the Application IP as are provided by the terms hereof.

3.2 Assistance to Company. Customer will, at its own expense, provide assistance to Company, including, but not limited to, by means of access to, and use of, Customer facilities and Customer equipment, as well as by means of assistance from Customer personnel, to the limited extent any of the foregoing may be reasonably necessary to enable Company to perform its obligations hereunder.

3.3 Data. To the extent that Customer and any Authorized End User, through or in connection with use of the Application IP, collect, use, store and disclose data from any other party, Customer shall accurately and adequately disclose, either through a privacy policy or otherwise, how Customer collects, uses, stores and discloses data, including, where applicable, that third parties (including advertisers) may serve content and/or advertisements and collect information directly from visitors and may place or recognize cookies on visitors' browsers.

3.4 Third-Party Products. Customer acknowledges and agrees that third party products (the "*Third Party Products*"), if any, which are provided with or incorporated as part of the Application Services (and/or the Application IP) are additionally subject to the applicable flow through provisions to the extent set forth on Schedule B.

4. FEES AND EXPENSES; PAYMENTS.

4.1 Fees. In consideration for the rights granted to Customer and the performance of Company's obligations under this Agreement, Customer shall pay to Company, without offset or deduction, certain fees, in such amounts as may be determined by reference to Schedule A (the "*Fees*"). Unless otherwise provided in a Schedule, all such fees shall be due and payable within thirty (30) calendar days after an invoice is issued by Company with respect thereto. Company may adjust the Fees at its election, after the initial term of this Agreement and upon each anniversary thereafter by providing at least one hundred and twenty (120) days' notice (which may be delivered electronically).

4.2 Customer Operating Expenses. Customer will bear all expenses incurred in performance of its obligations hereunder, including, without limitation, through use by Customer and/or any Authorized End User of the Application Service, and/or through provision of support to Authorized End Users with respect to such use of the Application Service.

4.3 Taxes. Customer will be responsible for payment of any applicable sales, use and other taxes and all applicable export and import fees, customs duties and similar charges (other than taxes based on Company's income), and any related penalties and interest for the grant of license rights hereunder, or the delivery of related services. Customer will make all required payments to Company free and clear of, and without reduction for, any withholding taxes. Any such taxes imposed on payments to Company will be Customer's sole respons bility, and Customer will, upon Company's request, provide Company with official receipts issued by the appropriate taxing authorities, or such other evidence as Company may reasonably request, to establish that such taxes have been paid.

4.4 Late Payments; Interest. Any portion of any amount payable hereunder that is not paid when due will accrue interest at one and one-half percent (1.5%) per month or the maximum rate permitted by applicable law, whichever is less, from the due date until paid.

5. TREATMENT OF CONFIDENTIAL INFORMATION.

5.1 Ownership of Confidential Information. The Parties acknowledge that during the performance of this Agreement, each Party will have access to certain of the other Party's Confidential Information or Confidential Information of third parties that the disclosing Party is required to maintain as confidential. Both Parties agree that all items of Confidential Information are

proprietary to the disclosing Party or such third party, as applicable, and will remain the sole property of the disclosing Party or such third party.

5.2 Mutual Confidentiality Obligations. Each Party agrees as follows: (i) to use Confidential Information disclosed by the other Party only for the purposes described herein; (ii) that such Party will not reproduce Confidential Information disclosed by the other Party, and will hold in confidence and protect such Confidential Information from dissemination to, and use by, any third party; (iii) that neither Party will create any derivative work from Confidential Information disclosed to such Party by the other Party; (iv) to restrict access to the Confidential Information disclosed by the other Party to such of its personnel, agents, and/or consultants, if any, who have a need to have access and who have been advised of and have agreed in writing to treat such information in accordance with the terms of this Agreement; and (v) to return or destroy, pursuant to Section 10.4, all Confidential Information disclosed by the other Party that is in its possession upon termination or expiration of this Agreement. Notwithstanding the foregoing, Customer agrees that Company may collect aggregated statistical data regarding Customer's use of the Application Service and provide such aggregated statistical data to third parties for the purposes of improving both the quality of the Application Service and improving the support processes relating to the Application Service, and other similar purposes. In no event shall Company provide to third parties specific data regarding Customer or Customer's Authorized End Users.

5.3 Confidentiality Exceptions. Notwithstanding the foregoing, the provisions of Sections 5.1 and 5.2 will not apply to Confidential Information that (i) is publicly available or in the public domain at the time disclosed; (ii) is or becomes publicly available or enters the public domain through no fault of the recipient; (iii) is rightfully communicated to the recipient by persons not bound by confidentiality obligations with respect thereto; (iv) is already in the recipient's possession free of any confidentiality obligations with respect thereto at the time of disclosure; (v) is independently developed by the recipient; or (vi) is approved for release or disclosure by the disclosing Party without restriction. Notwithstanding the foregoing, each Party may disclose Confidential Information to the limited extent required (x) in order to comply with the order of a court or other governmental body, or as otherwise necessary to comply with applicable law, provided that the Party making the disclosure pursuant to the order shall first have given written notice to the other Party and made a reasonable effort to obtain a protective order; or (y) to establish a Party's rights under this Agreement, including to make such court filings as it may be required to do.

6. REPRESENTATIONS AND WARRANTIES.

6.1 Mutual Representations. Each Party hereby represents and warrants (i) that it is duly organized, validly existing and in good standing under the laws of its jurisdiction of incorporation or organization; (ii) that the execution and performance of this Agreement will not conflict with or violate any provision of any law having applicability to such Party; and (iii) that this Agreement, when executed and delivered, will constitute a valid and binding obligation of such Party and will be enforceable against such Party in accordance with its terms.

6.2 Service Levels. Company warrants that the Application Service will conform in all material respects to the Service Standard set forth in Schedule C when accessed and used in accordance with the Application Documentation and the Access Protocols. Notwithstanding any other provision of this Agreement (including, without limitation, Section 6.1 of this Agreement), Customer acknowledges and agrees that its sole and exclusive remedy, and Company's sole and exclusive obligation, with respect to any breach of the foregoing warranty shall be remedies specified in such Schedule C. Company does not make any representations or guarantees regarding uptime or availability of the Application IP unless specifically identified in Schedule C.

7. DISCLAIMERS, EXCLUSIONS AND LIMITATIONS OF LIABILITY.

7.1 Disclaimer. EXCEPT AS EXPRESSLY REPRESENTED OR WARRANTED IN SECTION 6, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE APPLICATION IP, INCLUDING THE APPLICATION SERVICE, THE APPLICATION DOCUMENTATION, AND ALL SERVICES PERFORMED BY COMPANY ARE PROVIDED "AS IS," AND COMPANY AND ITS LICENSORS AND SUPPLIERS DISCLAIM ANY AND ALL OTHER PROMISES, REPRESENTATIONS AND WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, QUIET ENJOYMENT, SYSTEM INTEGRATION AND/OR DATA ACCURACY. COMPANY, ON BEHALF OF ITSELF AND ITS LICENSORS AND SUPPLIERS, DOES NOT WARRANT THAT THE APPLICATION IP, INCLUDING THE APPLICATION SERVICE OR ANY OTHER SERVICES PROVIDED BY COMPANY WILL MEET CUSTOMER'S REQUIREMENTS OR THAT THE OPERATION OF THE APPLICATION SERVICE WILL BE UNINTERRUPTED OR ERROR-FREE, OR THAT ALL ERRORS WILL BE CORRECTED.

7.2 Exclusions of Remedies; Limitation of Liability. EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS AGREEMENT, IN NO EVENT WILL COMPANY OR ITS LICENSORS AND SUPPLIERS BE LIABLE TO CUSTOMER FOR ANY INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, REGARDLESS OF THE NATURE OF THE CLAIM, INCLUDING, WITHOUT LIMITATION, LOST PROFITS, COSTS OF DELAY, ANY FAILURE OF DELIVERY, BUSINESS INTERRUPTION, COSTS OF LOST OR DAMAGED DATA OR DOCUMENTATION, OR LIABILITIES TO THIRD PARTIES ARISING FROM ANY SOURCE, EVEN IF COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION UPON DAMAGES AND CLAIMS IS INTENDED TO APPLY WITHOUT REGARD TO WHETHER OTHER PROVISIONS OF THIS AGREEMENT HAVE BEEN BREACHED OR HAVE PROVEN INEFFECTIVE. THE CUMULATIVE LIABILITY OF COMPANY TO CUSTOMER FOR ALL CLAIMS ARISING FROM OR RELATING TO THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, ANY CAUSE OF ACTION SOUNDING IN CONTRACT, TORT, OR STRICT LIABILITY, WILL NOT EXCEED THE TOTAL AMOUNT OF ALL FEES PAID TO COMPANY BY CUSTOMER IN THE TWELVE (12) MONTHS PRIOR TO THE ACT OR OMISSION GIVING RISE TO SUCH CLAIM. THIS LIMITATION OF LIABILITY IS INTENDED TO APPLY WITHOUT REGARD TO WHETHER

OTHER PROVISIONS OF THIS AGREEMENT HAVE BEEN BREACHED OR HAVE PROVEN INEFFECTIVE.

7.3 Essential Basis of the Agreement. Customer acknowledges and understands that the disclaimers, exclusions and limitations of liability set forth in this Section 7 form an essential basis of the agreement between the Parties, that the Parties have relied upon such disclaimers, exclusions and limitations of liability in negotiating the terms and conditions in this Agreement, and that absent such disclaimers, exclusions and limitations of liability, the terms and conditions of this Agreement would be substantially different.

8. INDEMNIFICATION.

8.1   Indemnification of Customer.   Company agrees to indemnify, defend and hold harmless Customer from and against any and all losses, liabilities, costs (including reasonable attorneys' fees) or damages resulting from any claim by any third party that the Application Service and/or the Application Documentation infringes such third party's US patents issued as of the Effective Date or infringes or misappropriates, as applicable, such third party's copyrights or trade secret rights under applicable laws of any jurisdiction, provided that Customer promptly notifies Company in writing of the claim, cooperates with Company, and allows Company sole authority to control the defense and settlement of such claim. If such a claim is made or appears possible, Customer agrees to permit Company, at Company's sole discretion, to enable it to continue to use the Application Service or the Application Documentation, as applicable, or to modify or replace any such infringing material to make it non-infringing. If Company determines that none of these alternatives is reasonably available, Customer shall, upon written request from Company, cease use of, and, if applicable, return, such materials as are the subject of the infringement claim. This Section 8.1 shall not apply to the extent that the alleged infringement arises from (i) modification of any of the Application IP by Customer, (ii) combination, operation or use of any of the Application IP with other software, hardware or technology not provided by Company, (iii) use of a superseded or altered release of any of the Application IP, if such infringement would have been avoided by the use of a then-current release of the Application IP, as applicable, and if such then-current release has been made available to Customer, (iv) any Customer Content, or (v) Third Party Products (any of the foregoing circumstances under clauses (i), (ii), (iii), or (iv) a "***Customer Indemnity Responsibility***"). IN NO EVENT SHALL COMPANY'S LIABILITY UNDER THIS SECTION 8 EXCEED THE LIMITATIONS OF LIABILITY IN SECTION 7.2.   THIS SECTION STATES COMPANY'S ENTIRE OBLIGATION AND LIABILITY WITH RESPECT TO ANY CLAIM OF INFRINGEMENT OR MISAPPROPRIATION.

8.2   Customer's Indemnity Obligations. Customer agrees to hold, harmless, indemnify, and, at Company's option, defend Company from and against any losses, liabilities, costs (including reasonable attorneys' fees) or damages resulting from (i) Customer's or any Authorized End User's negligence or willful misconduct; (ii) Customer's or any Authorized End User's use of the Application IP in a manner not authorized or contemplated by this Agreement; or (iii) a Customer Indemnity Responsibility, provided that Customer will not settle any third-party claim against Company unless such settlement completely and forever releases Company from all liability with respect to such claim or unless Company consents to such settlement, and further provided that Company will have the right, at its option, to defend itself against any such claim or to participate in the defense thereof by counsel of its own choice to the extent allowable by the laws of the Province of British Columbia.

9. TERM AND TERMINATION.

9.1   Term. The term of this Agreement will commence on the Effective Date and, unless earlier terminated in accordance with

this Section 9, will continue for the initial period of time set forth on the Cover Page.

9.2   Termination for Breach.   Either Party may, at its option, terminate this Agreement in the event of a material breach by the other Party.   Such termination may be effected only through a written notice to the breaching Party, specifically identifying the breach or breaches on which such notice of termination is based. The breaching Party will have a right to cure such breach or breaches within thirty (30) days of receipt of such notice, and this Agreement will terminate in the event that such cure is not made within such thirty (30) day period.

9.3   Termination Upon Bankruptcy or Insolvency. Either Party may, at its option, terminate this Agreement immediately upon written notice to the other Party, in the event (i) that the other Party becomes insolvent or unable to pay its debts when due; (ii) the other Party files a petition in bankruptcy, reorganization or similar proceeding, or, if filed against, such petition is not removed within ninety (90) days after such filing; (iii) the other Party discontinues it business; or (iv) a receiver is appointed or there is an assignment for the benefit of such other Party's creditors. In the case of insolvency or bankruptcy, Customer, prior to providing written termination notice to Company, may request that Company send Customer Content to Customer, to the extent allowable under United States law.

9.4   Effect of Termination.   Upon any termination of this Agreement, Customer will immediately discontinue all use of the Application Service, the Application Documentation, and any Company Confidential Information and both Parties will delete any of the other Party's Confidential Information from computer storage or any other media including, but not limited to, online and off-line libraries; (iii) return to the other Party or, at the other Party's option, destroy, all copies of the Application Documentation and any Confidential Information then in the other Party's possession; and (iv) promptly pay to Company all amounts due and payable to the other Party hereunder. Customer shall be entitled to access and retain all Customer data.

9.5   Survival. The provisions of Sections 2.3, 2.4, 3.4, 5, 7, 8, 9.4, 9.5 and 10 will survive the termination of this Agreement.

10. MISCELLANEOUS.

10.1   Entire Agreement. This Agreement sets forth the entire agreement and understanding between the Parties hereto with respect to the subject matter hereof and, except as specifically provided herein, supersedes and merges all prior oral and written agreements, discussions and understandings between the Parties with respect to the subject matter hereof, and neither of the Parties will be bound by any conditions, inducements or representations other than as expressly provided for herein.

10.2   Independent Contractors. In making and performing this Agreement, Customer and Company act and will act at all times as independent contractors, and, except as expressly set forth herein, nothing contained in this Agreement will be construed or implied to create an agency, partnership or employer and employee relationship between them. Except as expressly set forth herein, at no time will either Party make commitments or incur any charges or expenses for, or in the name of, the other Party.

10.3 Notices. All notices required by or relating to this Agreement shall be in writing and shall be sent by means of certified mail, postage prepaid, to the Parties to the Agreement and addressed, if to Customer, to the address set forth on the Cover Page, and if to Company, as follows:

If to Company: Proctorio, Incorporated
                   6840 E. Indian School Road
                   Suite 200
                   Scottsdale, Arizona 85251
                   Attention: Teddy Garland

with a copy to: Gunderson Dettmer
                     1200 Seaport Boulevard
                     Redwood City, CA 94063
                     Attention: Naveen Pai, Esq.

or addressed to such other address as that Party may have given by written notice in accordance with this provision. All notices required by or relating to this Agreement may also be communicated by facsimile, provided that the sender receives and retains confirmation of successful transmittal to the recipient. Such notices shall be effective on the date indicated in such confirmation. In the event that either Party delivers any notice hereunder by means of facsimile transmission in accordance with the preceding sentence, such Party will promptly thereafter send a duplicate of such notice in writing by means of certified mail, postage prepaid, to the receiving Party, addressed as set forth above or to such other address as the receiving Party may have previously substituted by written notice to the sender.

10.4 Amendments; Modifications. This Agreement may not be amended or modified except in a writing duly executed by authorized representatives of both Parties.

10.5 Assignment; Delegation. Neither Party shall assign any of its rights or delegate any of its duties under this Agreement without the express, prior written consent of the other Party, and, absent such consent, any attempted assignment or delegation will be null, void and of no effect. Notwithstanding the foregoing, Company may assign this Agreement, without consent, in connection with a merger, sale, transfer or other disposition of all or substantially all of its stock or assets.

10.6 No Third Party Beneficiaries. The Parties acknowledge that the covenants set forth in this Agreement are intended solely for the benefit of the Parties, their successors and permitted assigns. Nothing herein, whether express or implied, will confer upon any person or entity, other than the Parties, their successors and permitted assigns, any legal or equitable right whatsoever to enforce any provision of this Agreement.

10.7 Severability. If any provision of this Agreement is invalid or unenforceable for any reason in any jurisdiction, such provision will be construed to have been adjusted to the minimum extent necessary to cure such invalidity or unenforceability. The invalidity or unenforceability of one or more of the provisions contained in this Agreement will not have the effect of rendering any such provision invalid or unenforceable in any other case, circumstance or jurisdiction, or of rendering any other provisions of this Agreement invalid or unenforceable whatsoever.

10.8 Waiver. No waiver under this Agreement will be valid or binding unless set forth in writing and duly executed by the Party against whom enforcement of such waiver is sought. Any such waiver will constitute a waiver only with respect to the specific matter described therein and will in no way impair the rights of the Party granting such waiver in any other respect or at any other time. Any delay or forbearance by either Party in exercising any right hereunder will not be deemed a waiver of that right.

10.9 Force Majeure. Except with respect to payment obligations hereunder, if a Party is prevented or delayed in performance of its obligations hereunder as a result of circumstances beyond such Party's reasonable control, including, by way of example, war, riot, fires, floods, epidemics, or failure of public utilities or public transportation systems, such failure or delay will not be deemed to constitute a material breach of this Agreement, but such obligation will remain in full force and effect, and will be performed or satisfied as soon as reasonably practicable after the termination of the relevant circumstances causing such failure or delay, provided that if such Party is prevented or delayed from performing for more than ninety (90) days, the other Party may terminate this Agreement upon thirty (30) days' written notice.

10.10 Governing Law. THIS AGREEMENT WILL BE GOVERNED BY AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE PROVINCE OF BRITISH COLUMBIA,

{WB395106v2 }WEST\248655430.3

WITHOUT REGARD TO CONFLICTS OF LAW PRINCIPLES THEREOF OR TO THE UNITED NATIONS CONVENTION ON THE INTERNATIONAL SALE OF GOODS. FOR PURPOSES OF ALL CLAIMS BROUGHT UNDER THIS AGREEMENT, EACH OF THE PARTIES HEREBY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE PROVINCIAL AND FEDERAL COURTS LOCATED IN BRITISH COLUMBIA.

10.11 Publicity. With prior written permission from Customer Company can use the Customer as a reference, use Customer's logo in communications, or use Customer's logo on Company's website.

10.12 U.S. Government End-Users. Each of the Application Documentation and the software components that constitute the Application Service is a "commercial item" as that term is defined at 48 C.F.R. 2.101, consisting of "commercial computer software" and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212. Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4, all U.S. Government end users acquire the Application Service and the Application Documentation with only those rights set forth therein.

10.13 Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed will be deemed to be an original and all of which when taken together will constitute one Agreement.

10.14 Headings. The headings in this Agreement are inserted merely for the purpose of convenience and will not affect the meaning or interpretation of this Agreement.

[End of SaaS Terms]

SCHEDULE A

DESCRIPTION AND SPECIFICATION OF APPLICATION SERVICE

1. **Description of the Application Service**

Proctorio Secure Exam Proctor remote proctoring system to be delivered within Canvas learning management system.

2. **Specification & Deliverables**

Proctorio will deliver the Secure Exam Proctor as a service with unlimited exams and video review for the number of authorized users detailed below.

3. **Number of Authorized Users**

Type of Users	Number
Customer's Users	N/A
Student Users	TBD

4. **Payment Terms**

Customer shall pay to Company the following fees which shall apply to the initial term of the Agreement:

Authorized End User Fees

	Authorized End Users	$ Cost	$ SaaS Cost
Proctorio Secure Exam Proctor (Canvas)	TBD	**See proposed pricing**	TBD
Overall Fees			

Professional Services – Implementation and Set-up fees

Service Category	Rate / Day	Days	Cost
N/A			
Total Professional Services			

Professional Services Payment Terms	*N/A*

SCHEDULE B

SPECIFIC THIRD PARTY PRODUCT TERMS

Customer acknowledges and agrees that it has the right to use the Third Party Products in connection with its use of the Application Service under the terms and conditions of (i) this Agreement and (ii) such additional terms and conditions as set forth or referenced below. Company makes available the following Third Party Products as part of the Application Service:

N/A

SCHEDULE C

SERVICE LEVEL ADDENDUM

1. DEFINITIONS

Certain capitalized terms, not otherwise defined in this Schedule C, will have the meanings set forth in the Agreement. The following capitalized terms will have the definitions set forth below:

1.1 "***System Uptime***" will mean the total amount of time during any calendar month, measured in minutes, during which Customer has the ability to access the features and functions of the Application Service as contemplated in this Agreement.

1.2 "***Scheduled Downtime***" will mean the total amount of time during any calendar month, measured in minutes, during which Customer is not able to access the Application Service, as hosted by Company, due to planned system maintenance performed by Company, as set forth in the table below. Company will exercise reasonable efforts to perform scheduled system maintenance between the hours of 7:00 PM and 6:00 AM Pacific Standard Time. Company reserves the right to change the aggregated times set forth in the table below, provided that Company provides reasonable prior notice prior to modifying such Scheduled Downtime.

When Scheduled Downtime will occur on a regular basis:	Purpose of Scheduled Downtime:	Maximum Duration of Scheduled Downtime:
Each Weekend	system maintenance	2 hours
Each Weekend	database maintenance	1 hours
Once per calendar month	application/OS maintenance	6 hours
Once per calendar quarter	system maintenance/upgrades	3 hours per server

1.3 "***Unscheduled Downtime***" will mean the total amount of time during any calendar month, measured in minutes, during which the Customer is not able to access the features and functions of the Application Service as contemplated in this Agreement, other than Scheduled Downtime, as defined above.

1.4 "***System Availability***" will mean, with respect to any particular calendar month, the ratio obtained by subtracting Unscheduled Downtime during such month from the total time during such month, and thereafter dividing the difference so obtained by the total time during such month. Represented algebraically, System Availability for any particular calendar month is determined as follows:

$$\text{System Availability} = \frac{(\text{Total Monthly Time} - \text{Unscheduled Downtime})}{\text{Total Monthly Time}}$$

NOTE: "***Total Monthly Time***" is deemed to include all minutes in the relevant calendar month, to the extent such minutes are included within the Term of this Agreement.

2. CUSTOMER REQUIREMENTS

2.1 Minimum System: The service standards set forth in this Schedule C assume that Customer and its Authorized End Users, as applicable, meet the following minimum system standards, which may be updated from time to time by Company upon written notice to Customer:

	Windows	Mac	Linux	Chrome OS
Operating System	Windows XP SP3 Windows Vista Windows 7 Windows 8 Windows 10	Mac OSX 10.6+	Ubuntu 12.04+ Debian 7++ OpenSuSE 12.2++ Fedora Linux 17	Chrome 42+
Processor	Intel Pentium 4 or later	Intel	Intel Pentium 3 / Athelon 64 or later	Intel
Free Disk Space	250 MB	250 MB	250 MB	250 MB

RAM	4 GB	4 GB	4 GB	4 GB
Webcam	320x240 VGA resolution			

2.2 Additional Customer Obligations: Customer is responsible for maintenance and management of its computer network(s), servers, software, and any equipment or services related to maintenance and management of the foregoing. Customer is responsible for correctly configuring its systems in accordance with any instructions provided by Company, as may be necessary for provision of access to the features and functions of the Application Service.

2.3 Reporting of Unscheduled Downtime: Customer must promptly notify Company in the event Unscheduled Downtime occurs. Unscheduled Downtime will be deemed to begin when Company receives accurate notification thereof from Customer, or when Company first becomes aware of such Unscheduled Downtime, whichever first occurs.

2.4 Non-Performance by Customer: The obligations of Company set forth in this Schedule C will be excused to the extent any failures to meet such obligations result in whole or in part from Customer's or its End Users' failure(s) to meet the foregoing obligations.

3. PERFORMANCE

3.1 System Availability: Company will undertake commercially reasonable measures to ensure that System Availability equals or exceeds 99.7% during each calendar month (the "***Service Standard***"), provided that any Unscheduled Downtime occurring as a result of (i) Customer's breach of any provision of this Agreement; (ii) non-compliance by Customer with any provision of this Schedule C; (iii) incompatibility of Customer's or Authorized End User's equipment or software with the Application Service; (iv) performance of Customer's systems or the Internet; (v) modifications or updates by third party manufacturers/licensors to systems or software that interact with the Application Service; or (vi) force majeure, as defined in Section 10.9, shall not be considered toward any reduction in System Availability measurements.

3.2 Bandwidth Availability: Company monitors the aggregate packet loss and transmission latency within its LAN and WAN. Company does not monitor the packet loss or transmission latency of specific Customers. After discovering or being notified by Customer of packet loss in excess of one-half percent (0.5%), Company will use commercially reasonable efforts to determine the source of such excess packet loss or latency and to correct such problem to the extent that the source of the problem is on the Company Network.

3.3 Access to Support; Response Times: Customer may report Unscheduled Downtime at any time ("24x7x365") by telephoning Company at:

Primary Contact	Mike Olsen
	Co-founder
	480.428.1712
	mike@proctorio.com
Secondary Contact	Jon Lacivita
	VP of Business Development
	480.428.2606
	JonL@proctorio.com

Company will exercise commercially reasonable efforts to initiate remedial activity within 30 minutes of each report of Unscheduled Downtime during business hours (7:00AM to 6:00 PM Pacific Time, Monday through Friday, excluding Company holidays) for issues affecting connectivity and server availability. During non-business Hours, Company will initiate remedial activity within two (2) hours for issues affecting connectivity and server availability. In contacting the Company, Customer must not leave voice messages. Phone numbers should be called in priority order until a Company representative is reached directly.

4. SYSTEM MONITORING. Company uses network monitoring software and other related software tools. These utilities help with the daily monitoring of servers.

5. MEASUREMENT AND REPORTS. Company will provide for monitoring of System Availability on an ongoing basis. All measurements of System Availability will be calculated on a monthly basis for each calendar month during the Term.

6. REMEDIES

6.1 Credits Against Fees: In the event Unscheduled Downtime occurs, Customer will be entitled to credits against its subsequent payment obligations (as set forth in Schedule C) according to the following:

The network of computers will have a guaranteed aggregate average uptime of 99.7% over the course of three (3) months. This does not include scheduled downtime for maintenance on servers, which will be minimal, and necessary. This also does not include mass-network problems such as major backbone problems. For every 1.0% of Unscheduled Downtime below the Service Standard that Company experiences during a calendar month, a credit of 5% of 1/12th of Customer's annual Fees paid by Customer will be credited to Customer's account, up to a maximum of 50% of 1/12 of the applicable annual Fees paid by Customer.

Customer must submit full documentation by e-mail to Company with the credit request. Documentation must show details of proof of downtime. These can be in any manner including pings, trace routes, and third-party outage notifications for the past three (3) months. E-mails without full details are not liable for a credit.

Company will not be liable for any lost revenues during down time.

Except as set forth in the following Section 6.2, the Customer's rights under this Section 6.1 are Customer's sole and exclusive remedy with respect to any Unscheduled Downtime or any failure by Company to meet the Service Standard required by Section 3.1.

6.2 Termination for Performance Deficiencies: Company acknowledges that System Availability is important to Customer's business processes. Accordingly, Customer may exercise its rights to terminate this Agreement in the event that (i) Company fails to meet the Service Standard three (3) or more times during any twelve (12)-month period; (ii) System Availability for any single calendar month falls below 98%; or (iii) Company does not respond within 90 minutes to Customer reports of Unscheduled Downtime with respect to 50% or more of such reports during any twelve (12)-month period. Notwithstanding the foregoing, no material breach of this Agreement will be deemed to occur if Company fails to meet the Service Standard less than three (3) times in any twelve (12)-month period provided no such failure causes System Availability to fall below 90% during the relevant calendar month.

PROCTORIO, INCORPORATED
PROFESSIONAL SERVICES ADDENDUM

This **PROFESSIONAL SERVICES ADDENDUM** (the "*Addendum*") is an addendum to, and is hereby incorporated into, the **Software-as-a-Service Agreement** between Company and Customer, including the SaaS Terms and other Addenda incorporated therein (collectively, the "*Agreement*").

1.   ADDITIONAL DEFINITIONS. Certain capitalized terms used in this Addendum, not otherwise defined above, shall have the meanings set forth or cross-referenced below. Capitalized terms used in this Addendum that are not otherwise defined in this Addendum have the meaning set forth in the Application Services Distribution Agreement.

1.1 "*Addendum Effective Date*" has the meaning set forth in Section 7.1.

1.2 "*Professional Services*" has the meaning set forth in Section 2.1.

1.3 "*Work Statement*" has the meaning set forth in Section 2.2.

2. PROFESSIONAL SERVICES

2.1 Professional Services. The Parties anticipate that Customer may desire to engage Company to perform certain services in connection with the access rights granted to Customer by Company under separate Addenda to this Agreement, including, by way of example, installation, configuration and/or customization of the Application Services or Customer's or Customers computers or related systems. Subject to the terms and conditions set forth in this Addendum, Company shall use commercially reasonable efforts to perform the services as set forth in Work Statements (as defined below) separately executed by the Parties (the "*Professional Services*"). Company shall perform the Professional Services in a professional manner in accordance with industry standards.

2.2 Issuance of Work Statements. Customer may request that Company perform services by delivering a written request describing the proposed Professional Services. Company shall prepare a draft work statement as an exhibit to this Addendum (each, a "*Work Statement*"). Such Work Statement shall describe the fees, costs and expenses payable by Customer to Company in connection with the performance of such services. Customer, within five (5) business days after receipt of the proposed Work Statement, shall notify Company of its acceptance of such Work Statement. Until mutual acceptance in writing of the proposed Work Statement, Company shall have no obligation to perform the proposed Professional Services, provided that this Addendum shall remain in full force and effect in accordance with Section 7.1. Each Work Statement, regardless of whether it relates to the same subject matter as any previously executed Work Statement(s), shall become effective upon execution by authorized representatives of both Parties.

2.3   Modifications. Customer may at any time request a modification to the Professional Services to be performed pursuant to any particular Work Statement by written request to Company specifying the desired modifications. Company shall, within a reasonable time following receipt of such request, submit an estimate of the cost for such modifications and a revised estimate of the time for performance of the Professional Services pursuant to the Work Statement. If accepted in writing by Customer, such modifications in the Work Statement shall be performed under the terms of this Addendum. Modifications in any Work Statement shall become effective only when a written change request is executed by authorized representatives of both parties.

3. PERSONNEL

3.1   Suitability. Company shall assign employees and subcontractors with qualifications suitable for the work described in the relevant Work Statement. Company may replace or change employees and subcontractors in its sole discretion with other suitably qualified employees or subcontractors.

3.2 Customer Responsibilities. Customer shall make available in a timely manner at no charge to Company all technical data, computer facilities, programs, files, documentation, test data, sample output, or other information and resources of Customer required by Company for the performance of the Professional Services. Customer shall be responsible for, and assumes the risk of, any problems resulting from, the content, accuracy, completeness and consistency of all such data, materials and information supplied by Customer. Customer shall provide, at no charge to Company, office space, services and equipment (such as copiers, fax machines and modems) as Company reasonably requires to perform the Professional Services.

3.3 Nonsolicitation. Customer acknowledges and agrees that the employees and consultants of Company who perform the Professional Services are a valuable asset to Company and are difficult to replace. Accordingly, Customer agrees that, for a period of one (1) year after the termination or expiration of this Addendum, it shall not offer employment or engagement (whether as an employee, independent contractor or consultant) to any Company employee or consultant who performs any of the Professional Services. Customer agrees that for each individual that Customer hires or engages in violation of this Section 3.3, Customer shall pay to Company liquidated damages equal to fifty percent (50%) of the annual cumulative value of salary and benefits paid or payable to that individual by either Customer or Company, whichever amount is greater.

4.   FEES AND PAYMENTS. In consideration of the Professional Services, Customer shall pay Company at Company's then standard hourly rates provided to Customer as well as any other fees required by the applicable Work Statement. Company shall submit for approval by Customer a written Travel & Living expenses estimate for the initial Professional Services implementation and setup and for each work statement implemented pursuant to this Agreement., Customer will reimburse Company for (i) reasonable travel and living expenses incurred by Company's employees and contractors for travel from Company's offices in connection with the performance of the Professional Services; (ii) reasonable international telephone charges (if applicable); that are necessary to the performance of Professional Services under this Agreement; and (iii) any other expenses for which reimbursement is contemplated in the applicable Work Statement.   Except as provided above, each Party will be responsble for its own expenses incurred in rendering performance under this Addendum and each applicable Work Statement. Unless otherwise contemplated in a particular Work Statement, Company will issue invoices to Customer on a monthly basis for amounts due under this Addendum, and payment of such amounts shall be due within ten (10) days of the date of invoice.

5. PROPRIETARY RIGHTS. Unless otherwise expressly agreed in any particular Work Statement, ownership of all work product, developments, inventions, technology or materials provided under this Addendum shall be solely owned by Company, subject to the usage rights granted to Customer under the relevant Work Statement.

6. LIMITATION OF WARRANTIES AND LIABILITY. COMPANY MAKES NO REPRESENTATIONS OR WARRANTIES UNDER THIS ADDENDUM, AND CUSTOMER ACKNOWLEDGES THAT

THIS ADDENDUM IS SUBJECT TO ALL DISCLAIMERS AND LIMITATIONS OR LIABILITY SET FORTH IN THE SAAS TERMS.

7. TERM; TERMINATION

7.1 Term. This Addendum shall commence on the date of execution by both Parties (the "***Addendum Effective Date***") and shall remain in effect until the earlier to occur of (i) completion of all outstanding Work Statements hereunder; or (ii) termination in accordance with Section 7.2. Notwithstanding the foregoing, this Addendum shall remain in effect for a period of not less than one (1) year from the Addendum Effective Date unless earlier terminated in accordance with Section 7.2. Unless otherwise stated in the applicable Work Statement, the term of each Work Statement shall last until performance thereunder is completed.

7.2 Termination for Breach. Either Party may, at its option, terminate this Addendum in the event of a material breach by the other Party. Such termination may be effected only through a written notice to the breaching Party, specifically identifying the breach or breaches on which such notice of termination is based. The breaching Party will have a right to cure such breach or breaches within thirty (30) days of receipt of such notice, and this Addendum shall terminate in the event that such cure is not made within such thirty (30)-day period. Without limiting the foregoing, Company may immediately terminate this Addendum upon written notice in the event that Customer becomes insolvent or enters bankruptcy during the term of this Addendum.

7.3 Termination of Individual Work Statements. Either Party may, at its sole option and for its own convenience, terminate any or all Work Statements in effect upon fifteen (15) days prior written notice. Upon such termination, the Parties shall inform each other of the extent to which performance has been completed through such date, and collect and deliver all work in process. In the event of termination, the Parties agree to wind up their work in a commercially reasonable manner and to preserve and deliver items of value created prior to termination. Company shall be paid for all work performed and expenses incurred through the date of termination.

7.4 Effect of Termination. In the event of termination or expiration of this Addendum, Customer shall promptly pay to Company all amounts due and outstanding.

7.5 Survival. The provisions of Sections 3.3, 4, 5, 6, 7.4 and 7.5 will survive the termination or expiration of this Addendum.

The Parties agree to the above terms and have executed this Addendum as of the date(s) set forth below.

CUSTOMER: ⎯

By (Signature):	*Fred Levinsky* BF6DBBB05AC0476...	**By (Signature):**	*Jon Lacivita* 96A357682E0E484...
Name (Printed):	Fred Levinsky	**Name (Printed):**	Jon Lacivita
Title:	Senior Procurement Officer	**Title:**	VP of Business Development
Date:	3/4/2018	**Date:**	3/5/2018

PROCTORIO, INCORPORATED

Proposed Pricing

Enterprise Pricing (Per student per year)

Online Student Seats	Annual Cost per Student
1 - 200	$35
201 - 1,000	$30
1,001 - 5,000	$25
5,001 - 10,000	$20
10,001 - 20,000	$15
20,001 +	$10

Per Exam Pricing

Number of Exams	Cost per Exam
1 +	$10

THE UNIVERSITY OF BRITISH COLUMBIA

August 31, 2018

BY EMAIL

Bryan Short
Bryan.a.short@gmail.com

UBC File: 18-128

This is Exhibit A, referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

A Commissioner for taking Affidavits for
British Columbia

Dear Mr. Short:

Re: *Freedom of Information and Protection of Privacy Act* (the Act) Request for Records

The University of British Columbia (UBC) is responding to your request dated April 4, 2018 in which you requested the following:

1. File no.: 17254 (7/14/2017) "Copies of all vendor responses that were submitted to the University of British Columbia for a Learning Management (LMS) Contract"
2. All minutes and presentation slides for the Learning Data Committee and the Steering Committee.
3. Each contract that UBC holds with companies that have access to the personal information of UBC students through Canvas by Instructure and Blackboard Connect
4. The UBC contracts for Canvas by Instructure and Blackboard Connect

In regards to item 1, we responded by email on June 20, 2018.

In regard to items 2 and 3, we are able to provide you partial access to the responsive records we have located. As some records contain sensitive information, we have withheld this information where indicated in accordance with sections 13 and 14 of the Act.

Please access the records and these sections of the Act through Workspace, UBC's secure file sharing system, at https://files.workspace.ubc.ca/. For your convenience, this folder will remain active for two weeks.

In regards to item 4, we have issued notices pursuant to section 23 of the Act to two third parties We will respond to this portion of the request in accordance with sections 23 and 24 of the Act.

Under section 52 of the Act, you have the right to ask the Information and Privacy Commissioner for a review of UBC's response. You must submit your request in writing, including the information listed below, within 30 days upon receipt of this letter to:

Office of the Information and Privacy Commissioner
PO Box 9038, Stn. Prov. Govt.   T: 250-387-5629   W: www.oipc.bc.ca
Victoria, BC V8W 9A4   F: 250-387-1696   E: info@oipc.bc.ca

1.   Your name, address and telephone number;
2.   A copy of your original request for information delivered to UBC;
3.   A copy of this letter; and
4.   The reasons or grounds upon which you are requesting the review.

If you have any questions after reviewing this letter, please contact me.

Sincerely,

Courtney Waverick
Freedom of Information Specialist
Office of the University Counsel

Encl: Records, Sections 13 and 14

CA

Search

About   Press & Blogs   Copyright   Safety   Creators & Partners   Advertising   Developers   Help

TERMS OF SERVICE

Paid Service Terms of Service

Paid Service Usage Rules

Collecting Society Notices

Copyright Notices

Community Guidelines

Terms of Service

Our Terms of Service have been updated.

This summary is designed to help you understand some of the key updates we've made to our Terms of Service (Terms). We hope this serves as a useful guide, but please ensure you read the new Terms in full.

Welcome to YouTube!

This section outlines our relationship with you. It includes a description of the Service, defines our Agreement, and names your service provider. Key updates:

- **Service Provider.** Your service provider is now Google LLC.
- **Policies.** We have added a link to the Policy, Safety and Copyright Policies, and our Advertising on YouTube Policies, which all form part of the Agreement. These are the policies that underpin our Community Guidelines, and we wanted to make sure to call out this detail to you upfront in our Terms.
- **Affiliates.** To ensure you understand exactly who we mean when we talk about our group companies, we've included a definition of our "Affiliates", meaning the companies in the Alphabet corporate group.

Who May Use the Service?

This section sets out certain requirements for use of the Service, and defines categories of users. Key updates:

- **Age Requirements.** We have stated the specific age requirements for your country, reflecting our Google wide policies, and included a notice that, if you are a minor in your country, you must always have your parent or guardian's permission before using the Service.
- **Parental Permission.** We've added a section to explain your responsibility if you allow your child to use YouTube.
- **Businesses.** Our Terms now make clear that, if you are using the Service on behalf of a company or organisation, that business accepts this Agreement.

Your Use of the Service

This section explains your rights to use the Service, and the conditions that apply to your use of the Service. It also explains how we may make changes to the Service. Key updates:

- **Google Accounts and YouTube Channels.** We've provided details about which features of the Service can be accessed without a Google account or YouTube channel, and which features require one.
- **Your Information.** We haven't made any changes to the way we treat your information. You can read about our privacy practices by reviewing the Privacy Policy and YouTube Kids Privacy Notice. As a reminder, you can always review your privacy settings and manage your data and personalisation by visiting your Google Account.
- **Restrictions.** We have updated this section to reflect our requirements around contests, and to include a prohibition on manipulating metrics.
- **Service Changes.** We have improved our Terms to be more transparent about why we might need to make changes to the Service, and provided a commitment to give you notice when those changes might affect you.

Your Content and Conduct

This section applies to users who provide Content to the Service. It defines the scope of the permissions that you grant by uploading your Content, and includes your agreement not to upload anything that infringes on anyone else's rights. Key updates:

- **License.** We've clarified the content license you grant us to make it easier to understand. We're not asking for additional permissions and there's no difference in how we're using your content.
- **Duration.** We have removed the right for YouTube to use your comments in perpetuity.
- **Removals.** We have included a link to the tools you will need to remove your content, as well as a clear description about why we might need to take down content, and how to appeal removals.
- **Analyzing Content.** We may automatically analyze content on YouTube, to help detect abuse and keep the platform safe.

Account Suspension and Termination

This section explains how you and YouTube may terminate this relationship. Key updates:

- **Terminations.** Our Terms now include more details about when we might need to terminate our Agreement with bad actors. We provide a greater commitment to give notice when we take such action and what you can do to appeal if you think we've got it wrong. We've also added instructions for you, if you decide you no longer want to use the Service.

About Software in the Service

This section includes details about software on the Service. Key updates:

This section includes details about software on the Service. Key updates:

- **Software Licences.** We've made the software licence we grant you more specific, and included some details around open source.

Other Legal Terms

This section includes our service commitment to you. It also explains that there are some things we will not be responsible for. Key updates:

- **Our liability.** We've made changes to the disclaimers and limitations of liability in the Terms.

About this Agreement

This section includes some further important details about our contract, including what to expect if we need to make changes to these Terms; or which law applies to them. Key updates:

- **Modifications.** We want to give you the chance to review future material updates to these Terms.

Still have questions?

You can also find further details in our Help Center.

Terms of Service
Dated: December 10, 2019

Welcome to YouTube!

Introduction
Thank you for using the YouTube platform and the products, services and features we make available to you as part of the platform (collectively, the "Service").

Our Service

The Service allows you to discover, watch and share videos and other content, provides a forum for people to connect, inform, and inspire others across the globe, and acts as a distribution platform for original content creators and advertisers large and small. We provide lots of information about our products and how to use them in our Help Center. Among other things, you can find out about YouTube Kids, the YouTube Partner Program and YouTube Paid Memberships and Purchases (where available). You can also read all about enjoying content on other devices like your television, your games console, or Google Home.

Your Service Provider

The entity providing the Service is Google LLC, a company operating under the laws of Delaware, located at 1600 Amphitheatre Parkway, Mountain View, CA 94043 (referred to as "**YouTube**", "**we**", "**us**", or "**our**"). References to YouTube's "Affiliates" in these terms means the other companies within the Alphabet Inc. corporate group (now or in the future).

Applicable Terms
Your use of the Service is subject to these terms, the YouTube Community Guidelines and the Policy, Safety and Copyright Policies which may be updated from time to time (together, this "Agreement"). Your Agreement with us will also include the Advertising on YouTube Policies if you provide advertising or sponsorships to the Service or incorporate paid promotions in your content. Any other links or references provided in these terms are for informational use only and are not part of the Agreement.

Please read this Agreement carefully and make sure you understand it. If you do not understand the Agreement, or do not accept any part of it, then you may not use the Service.

Who may use the Service?

Age Requirements
You must be at least 13 years old to use the Service. However, children of all ages may use YouTube Kids (where available) if enabled by a parent or legal guardian.

Permission by Parent or Guardian

If you are under 18, you represent that you have your parent or guardian's permission to use the Service. Please have them read this Agreement with you.

If you are a parent or legal guardian of a user under the age of 18, by allowing your child to use the Service, you are subject to the terms of this Agreement and responsible for your child's activity on the Service. You can find tools and resources to help you manage your family's experience on YouTube in our Help Center and through Google's Family Link.

Businesses
If you are using the Service on behalf of a company or organisation, you represent that you have authority to act on behalf of that entity, and that such entity accepts this Agreement.

Your Use of the Service

Content on the Service
The content on the Service includes videos, audio (for example music and other sounds), graphics, photos, text (such as comments and scripts), branding (including trade names, trademarks, service marks, or logos), interactive features, software, metrics, and other materials whether provided by you, YouTube or a third-party (collectively, "Content").

Content is the responsibility of the person or entity that provides it to the Service. YouTube is under no obligation to host or serve Content. If you see any Content you believe does not comply with this Agreement, including by violating the Community Guidelines or the law, you can report it to us.

Google Accounts and YouTube Channels
You can use parts of the Service, such as browsing and searching for Content, without having a Google account. However, you do need a Google account to use some features. With a Google account, you may be able to like videos, subscribe to channels, create your own YouTube channel, and more. You can follow these instructions to create a Google account.

Creating a YouTube channel will give you access to additional features and functions, such as uploading videos, making comments or creating playlists (where available). Here are some details about how to create your own YouTube channel.

To protect your Google account, keep your password confidential. You should not reuse your Google account password on third-party applications. Learn more about keeping your Google account secure, including what to do if you learn of any unauthorised use of your password or Google account.

Your Information
Our Privacy Policy explains how we treat your personal data and protect your privacy when you use the Service. The YouTube Kids Privacy Notice provides additional information about our privacy practices that are specific to YouTube Kids.

We will process any audio or audiovisual content uploaded by you to the Service in accordance with the YouTube Data Processing Terms, except in cases where you uploaded such content for personal purposes or household activities. Learn More.

Permissions and Restrictions
You may access and use the Service as made available to you, as long as you comply with this Agreement and applicable law. You may view or listen to Content for your personal, non-commercial use. You may also show YouTube videos through the embeddable YouTube player.

The following restrictions apply to your use of the Service. You are not allowed to:

1. access, reproduce, download, distribute, transmit, broadcast, display, sell, license, alter, modify or otherwise use any part of the Service or any Content except: (a) as expressly authorized by the Service; or (b) with prior written permission from YouTube and, if applicable, the respective rights holders;
2. circumvent, disable, fraudulently engage with, or otherwise interfere with any part of the Service (or attempt to do any of these things), including security-related features or features that (a) prevent or restrict the copying or other use of Content or (b) limit the use of the Service or Content;
3. access the Service using any automated means (such as robots, botnets or scrapers) except (a) in the case of public search engines, in accordance with YouTube's robots.txt file; or (b) with YouTube's prior written permission;
4. collect or harvest any information that might identify a person (for example, usernames), unless permitted by that person or allowed under section (3) above;
5. use the Service to distribute unsolicited promotional or commercial content or other unwanted or mass solicitations;
6. cause or encourage any inaccurate measurements of genuine user engagement with the Service, including by paying people or providing them with incentives to increase a video's views, likes, or dislikes, or to increase a channel's subscribers, or otherwise manipulate metrics in any manner;
7. misuse any reporting, flagging, complaint, dispute, or appeals process, including by making groundless, vexatious, or frivolous submissions;
8. run contests on or through the Service that do not comply with YouTube's contest policies and guidelines;
9. use the Service to view or listen to Content other than for personal, non-commercial use (for example, you may not publicly screen videos or stream music from the Service); or
10. use the Service to (a) sell any advertising, sponsorships, or promotions placed on, around, or within the Service or Content, other than those allowed in the Advertising on YouTube policies (such as compliant product placements); or (b) sell advertising, sponsorships, or promotions on any page of any website or application that only contains Content from the Service or where Content from the Service is the primary basis for such sales (for example, selling ads on a webpage where YouTube videos are the main draw for users visiting the webpage).

Reservation

Using the Service does not give you ownership of or rights to any aspect of the Service, including user names or any other Content posted by others or YouTube.

Changes to the Service

YouTube is constantly changing and improving the Service. We may also need to alter or discontinue the Service, or any part of it, in order to make performance or security improvements, change functionality and features, make changes to comply

with law, or prevent illegal activities on or abuse of our systems. These changes may affect all users, some users or even an individual user. Whenever reasonably possible, we will provide notice when we discontinue or make material changes to our Service that will have an adverse impact on the use of our Service. However, you understand and agree that there will be times when we make such changes without notice, such as where we feel we need to take action to improve the security and operability of our Service, prevent abuse, or comply with legal requirements.

Your Content and Conduct

Uploading Content

If you have a YouTube channel, you may be able to upload Content to the Service. You may use your Content to promote your business or artistic enterprise. If you choose to upload Content, you must not submit to the Service any Content that does not comply with this Agreement (including the YouTube Community Guidelines) or the law. For example, the Content you submit must not include third-party intellectual property (such as copyrighted material) unless you have permission from that party or are otherwise legally entitled to do so. You are legally responsible for the Content you submit to the Service. We may use automated systems that analyze your Content to help detect infringement and abuse, such as spam, malware, and illegal content.

Rights you Grant

You retain ownership rights in your Content. However, we do require you to grant certain rights to YouTube and other users of the Service, as described below.

License to YouTube

By providing Content to the Service, you grant to YouTube a worldwide, non-exclusive, royalty-free, sublicensable and transferable license to use that Content (including to reproduce, distribute, prepare derivative works, display and perform it) in connection with the Service and YouTube's (and its successors' and Affiliates') business, including for the purpose of promoting and redistributing part or all of the Service.

License to Other Users

You also grant each other user of the Service a worldwide, non-exclusive, royalty-free license to access your Content through the Service, and to use that Content, including to reproduce, distribute, prepare derivative works, display, and perform it, only as enabled by a feature of the Service (such as video playback or embeds). For clarity, this license does not grant any rights or permissions for a user to make use of your Content independent of the Service.

Duration of License

The licenses granted by you continue for a commercially reasonable period of time after you remove or delete your Content from the Service. You understand and agree, however, that YouTube may retain, but not display, distribute, or perform, server copies of your videos that have been removed or deleted.

Removing Your Content

You may remove your Content from the Service at any time. You also have the option to make a copy of your Content before removing it. You must remove your Content if you no longer have the rights required by these terms.

Removal of Content By YouTube

If we reasonably believe that any Content is in breach of this Agreement or may cause harm to YouTube, our users, or third parties, we may remove or take down that Content in our discretion. We will notify you with the reason for our action unless we reasonably believe that to do so: (a) would breach the law or the direction of a legal enforcement authority or would otherwise risk legal liability for YouTube or our Affiliates; (b) would compromise an investigation or the integrity or operation of the Service; or (c) would cause harm to any user, other third party, YouTube or our Affiliates. You can learn more about reporting and enforcement, including how to appeal on the Troubleshooting page of our Help Center.

Copyright Protection

We provide information to help copyright holders manage their intellectual property online in our YouTube Copyright Center. If you believe your copyright has been infringed on the Service, please send us a notice.

We respond to notices of alleged copyright infringement according to the process in our YouTube Copyright Center, where you can also find information about how to resolve a copyright strike. YouTube's policies provide for the termination, in appropriate circumstances, of repeat infringers' access to the Service.

Account Suspension & Termination

Terminations by You
You may stop using the Service at any time. Follow these instructions to delete the Service from your Google Account, which involves closing your YouTube channel and removing your data. You also have the option to download a copy of your data first.

Terminations and Suspensions by YouTube for Cause

YouTube may suspend or terminate your access, your Google account, or your Google account's access to all or part of the Service if (a) you materially or repeatedly breach this Agreement; (b) we are required to do so to comply with a legal requirement or a court order; or (c) we believe there has been conduct that creates (or could create) liability or harm to any user, other third party, YouTube or our Affiliates.

Terminations by YouTube for Service Changes

YouTube may terminate your access, or your Google account's access to all or part of the Service if YouTube believes, in its sole discretion, that provision of the Service to you is no longer commercially viable.

Notice for Termination or Suspension

We will notify you with the reason for termination or suspension by YouTube unless we reasonably believe that to do so: (a) would violate the law or the direction of a legal enforcement authority, or would otherwise risk legal liability for YouTube or our Affiliates; (b) would compromise an investigation or the integrity or operation of the Service; or (c) would cause harm to any user, other third party, YouTube or our Affiliates. Where YouTube is terminating your access for Service changes, where reasonably possible, you will be provided with sufficient time to export your Content from the Service.

Effect of Account Suspension or Termination

If your Google account is terminated or your Google account's access to the Service is restricted, you may continue using certain aspects of the Service (such as viewing only) without an account, and this Agreement will continue to apply to such use. If you believe your Google account has been terminated in error, you can appeal using this form.

About Software in the Service

Downloadable Software
When the Service requires or includes downloadable software (such as the YouTube Studio application), you give permission for that software to update automatically on your device once a new version or feature is available, subject to your device settings. Unless that software is governed by additional terms which provide a license, YouTube gives you a personal, worldwide, royalty-free, non-assignable and non-exclusive license to use the software provided to you by YouTube as part of the Service. This license is for the sole purpose of enabling you to use and enjoy the benefit of the Service as provided by YouTube, in the manner permitted by this Agreement. You are not allowed to copy, modify, distribute, sell, or lease any part of the software, or to reverse-engineer or attempt to extract the source code of that software, unless laws prohibit these restrictions or you have YouTube's written permission.

Open Source
Some software used in our Service may be offered under an open source license that we make available to you. There may be provisions in an open source license that expressly override some of these terms, so please be sure to read those licenses.

Other Legal Terms

Warranty Disclaimer
OTHER THAN AS EXPRESSLY STATED IN THIS AGREEMENT OR AS REQUIRED BY LAW, THE SERVICE IS PROVIDED "AS IS" AND YOUTUBE DOES NOT MAKE ANY SPECIFIC COMMITMENTS OR WARRANTIES ABOUT THE SERVICE. FOR EXAMPLE, WE DON'T MAKE ANY WARRANTIES ABOUT: (A) THE CONTENT PROVIDED THROUGH THE SERVICE; (B) THE SPECIFIC FEATURES OF THE SERVICE, OR ITS ACCURACY, RELIABILITY, AVAILABILITY, OR ABILITY TO MEET YOUR NEEDS; OR (C) THAT ANY CONTENT YOU SUBMIT WILL BE ACCESSIBLE ON THE SERVICE.

Limitation of Liability

EXCEPT AS REQUIRED BY APPLICABLE LAW, YOUTUBE, ITS AFFILIATES, OFFICERS, DIRECTORS, EMPLOYEES AND AGENTS WILL NOT BE RESPONSIBLE FOR ANY LOSS OF PROFITS, REVENUES, BUSINESS OPPORTUNITIES, GOODWILL, OR ANTICIPATED SAVINGS; LOSS OR CORRUPTION OF DATA; INDIRECT OR CONSEQUENTIAL LOSS; PUNITIVE DAMAGES CAUSED BY:

1. ERRORS, MISTAKES, OR INACCURACIES ON THE SERVICE;
2. PERSONAL INJURY OR PROPERTY DAMAGE RESULTING FROM YOUR USE OF THE SERVICE;
3. ANY UNAUTHORIZED ACCESS TO OR USE OF THE SERVICE;
4. ANY INTERRUPTION OR CESSATION OF THE SERVICE;
5. ANY VIRUSES OR MALICIOUS CODE TRANSMITTED TO OR THROUGH THE SERVICE BY ANY THIRD PARTY;
6. ANY CONTENT WHETHER SUBMITTED BY A USER OR YOUTUBE, INCLUDING YOUR USE OF CONTENT; AND/OR
7. THE REMOVAL OR UNAVAILABILITY OF ANY CONTENT.

THIS PROVISION APPLIES TO ANY CLAIM, REGARDLESS OF WHETHER THE CLAIM ASSERTED IS BASED ON WARRANTY, CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

YOUTUBE AND ITS AFFILIATES' TOTAL LIABILITY FOR ANY CLAIMS ARISING FROM OR RELATING TO THE SERVICE IS LIMITED TO THE GREATER OF: (A) THE AMOUNT OF REVENUE THAT YOUTUBE HAS PAID TO YOU FROM YOUR USE OF THE SERVICE IN THE 12 MONTHS BEFORE THE DATE OF YOUR NOTICE, IN WRITING TO YOUTUBE, OF THE CLAIM AND (B) USD $500.

Indemnity

To the extent permitted by applicable law, you agree to defend, indemnify and hold harmless YouTube, its Affiliates, officers, directors, employees and agents, from and against any and all claims, damages, obligations, losses, liabilities, costs or debt, and expenses (including but not limited to attorney's fees) arising from: (i) your use of and access to the Service; (ii) your violation of any term of this Agreement; (iii) your violation of any third party right, including without limitation any copyright, property, or privacy right; or (iv) any claim that your Content caused damage to a third party. This defense and indemnification obligation will survive this Agreement and your use of the Service.

Third-Party Links
The Service may contain links to third-party websites and online services that are not owned or controlled by YouTube. YouTube has no control over, and assumes no responsibility for, such websites and online services. Be aware when you leave the Service; we suggest you read the terms and privacy policy of each third-party website and online service that you visit.

About this Agreement

Modifying this Agreement
We may modify this Agreement, for example, to reflect changes to our Service or for legal, regulatory, or security reasons. YouTube will provide reasonable advance notice of any material modifications to this Agreement and the opportunity to review them, except that modifications addressing newly available features of the Service or modifications made for legal reasons may be effective immediately, without notice. Modifications to this Agreement will only apply going forward. If you do not agree to the modified terms, you should remove any Content you have uploaded and discontinue your use of the Service.

Continuation of this Agreement
If your use of the Service ends, the following terms of this Agreement will continue to apply to you: "Other Legal Terms", "About This Agreement", and the licenses granted by you will continue as described under "Duration of License".

Severance
If it turns out that a particular term of this Agreement is not enforceable for any reason, this will not affect any other terms.

No Waiver
If you fail to comply with this Agreement and we do not take immediate action, this does not mean that we are giving up any rights that we may have (such as the right to take action in the future).

Interpretation

In these terms, "include" or "including" means "including but not limited to," and any examples we give are for illustrative purposes.

Governing Law
All claims arising out of or relating to these terms or the Service will be governed by California law, except California's conflict of laws rules, and will be litigated exclusively in the federal or state courts of Santa Clara County, California, USA. You and YouTube consent to personal jurisdiction in those courts.

Effective as of December 10, 2019 (view previous version)

Language: **English (UK)** ▼   Location: **Canada** ▼   Restricted Mode: **Off** ▼   History   Help

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About   **Press**   **Copyright**   **Creators**   **Advertise**   **Developers**

Terms   Privacy   Policy and Safety   Send feedback   Test new features
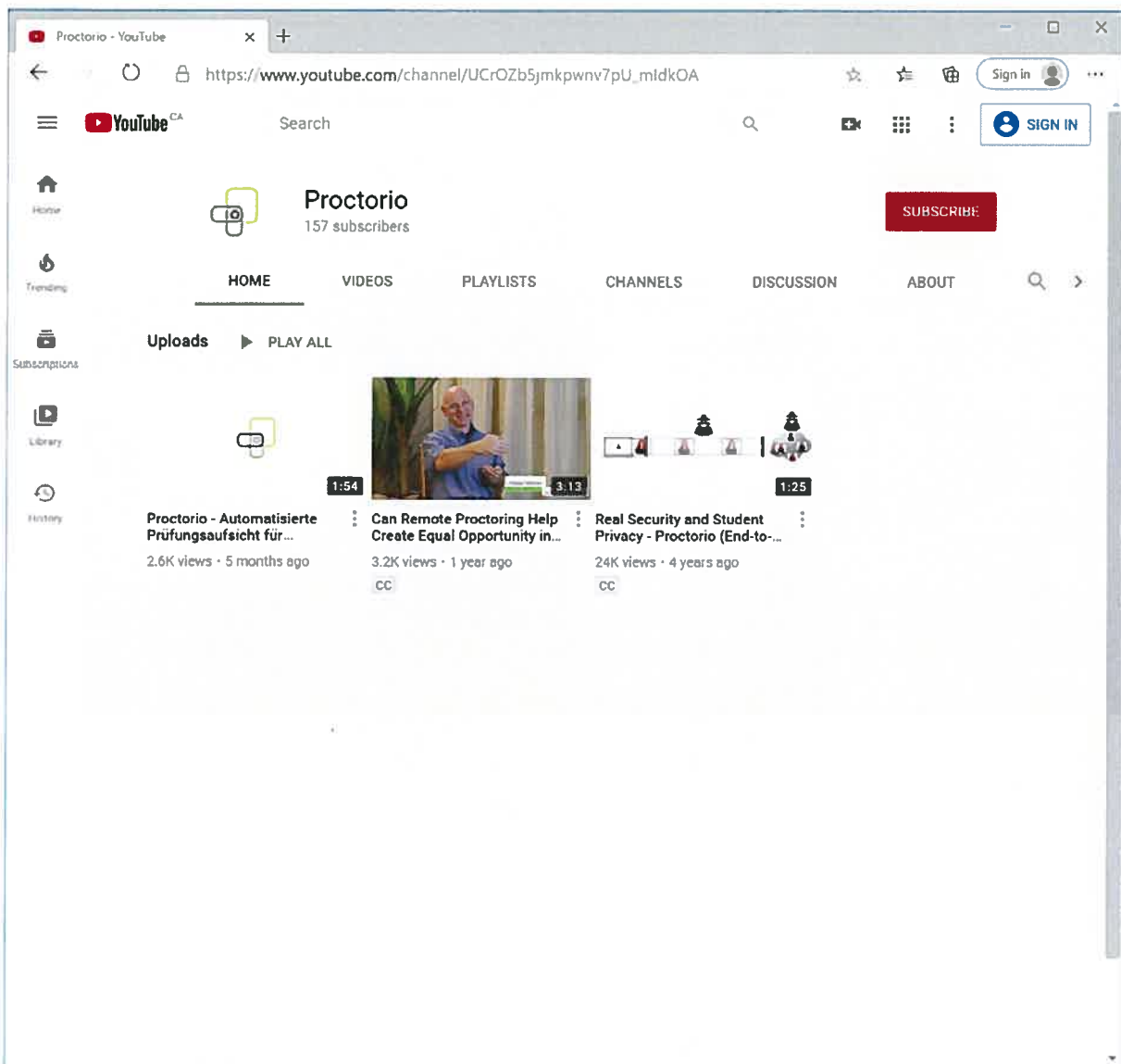
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Change video privacy settings

Update the privacy settings of your video to control where your video can appear and who can watch it.

Computer   Android   iPhone & iPad

Change video privacy settings

1. Sign in to YouTube Studio   .
2. From the left menu, select **Videos**.
3. Hover over the video you'd like to update. To see your live uploads, select the **Live** tab.
4. Click the down arrow under "Visibility" and choose **Public**, **Private**, or **Unlisted**.
5. **Save**.

This is Exhibit AO referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

A Commissioner for taking Affidavits for
British Columbia

Watch how to change video privacy settings

Check out the following video from the TeamYouTube channel on how to change video privacy settings.

Edit Video Settings with YouTube Studio

▶
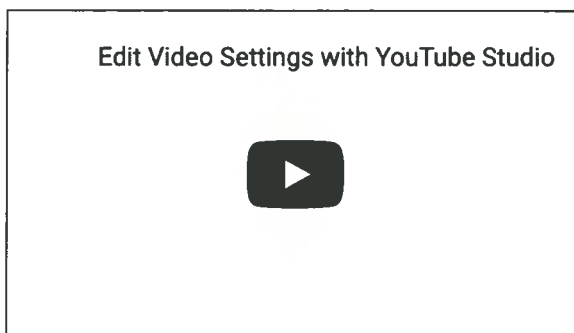
About privacy settings

Public videos

Public videos can be **seen by anyone at YouTube. They can also be shared with anyone using YouTube**. They're posted on your channel when you upload them and show up in search results and related video lists.

Private videos

Private videos and playlists can only be **seen by you and the people you choose**. Your private videos won't appear in the **Videos** tab of your channel page. They also won't show up in YouTube's search results. YouTube systems and human reviewers may review private videos for ad suitability, copyright, and other abuse prevention mechanisms.

To share a private video:

1. Sign in to YouTube Studio   .
2. From the left menu, select **Videos**.
3. Click the video you'd like to edit.
4. Hover over OPTIONS ⋮ and select **Share privately**.
5. Enter the email addresses of people you'd like to share your video with, then select SAVE.

Comments are not available on private videos. If you want to allow comments on a video that's not publicly available, change the privacy setting to unlisted.

Unlisted videos

Unlisted videos and playlists can be **seen and shared by anyone with the link**. Your unlisted videos won't appear in the **Videos** tab of your channel page. They won't show up in YouTube's search results unless someone adds your unlisted video to a public playlist.

You can share an unlisted video's URL with other people. The people you share the video with don't need a Google Account to see the video. Anyone with the link can also reshare it.

Feature	Private	Unlisted	Public
Can share URL	No	Yes	Yes
Can be added to a channel section	No	Yes	Yes
Shows up in search, related videos, and recommendations	No	No	Yes
Posted on your channel	No	No	Yes
Shows in Subscriber feed	No	No	Yes
Can be commented on	No	Yes	Yes

⊟! Give feedback about this article

Was this helpful?

Yes	No

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Get answers from community experts

Contact us
Tell us more and we'll help you get there

≡ ▶ YouTube

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Embed | Facebook | Twitter | reddit | Blogger | Tumbl

https://youtu.be/BqnlPUcy30s **COPY**

☐ Start at 0:01

Proctorio Manifesto

Proctorio

Inside the mind of a master procrastinator | Tim Urban

Second Oldest Trick in Sleight of Hand

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12 Year Old Boy Humiliates Simon Cowell

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Proctorio, Global Leader in Online x | +

← ○ 🔒 https://www.prweb.com/releases/2017/11/prweb14950071.htm

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PRWeb

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Thursday, September 24, 2020   📶 RSS   ✉ Email Newsletters   ⬆ Put PRWeb on your site

Proctorio, Global Leader in Online Proctoring, Reveals New Logo and Manifesto

Proctorio Manifesto

...torio

The new logo, tagline, mission statement and manifesto reflect the role of design thinking at Proctorio and its expanding mission to ensure academic integrity while increasing access to quality education worldwide.

SCOTTSDALE, ARIZ. (PRWEB) NOVEMBER 30, 2017

Proctorio has made a lot of news lately with its cutting-edge mobile technology and prestigious educational partnerships. Along with these innovations in online proctoring, Proctorio is excited to announce a new logo and tagline that embody the company's technological advancement and design thinking.

Founder and CEO, **Mike Olsen**, discussed the origins of Proctorio's original webcam logo, "The old logo was a symbol of security and vigilance and, while we continue to emphasize exam security, this new branding better represents the unique combination of simplicity and sophistication that is Proctorio." Olsen added, "Proctorio's ability to proctor online exams while protecting student privacy is unmatched, and we will continue to develop new features that allow institutions to protect academic integrity without sacrificing student privacy or data protections."

The new Proctorio logo is a little more abstract, and it features not one, but three webcams. The colors evoke mental activity, growth, knowledge and elegance. The webcam shapes form a letter "P" to represent the name "Proctorio". **Gary Ruiz**, Director of Media for

Exam Integrity by Design.

"Design thinking allows Proctorio to place instructors and students at the center of product development."

Share Article

Ⓨ Ⓕ Ⓖ Ⓘ Ⓞ Ⓜ

Contact Author

MIKE OLSEN

Proctorio
+1 4804284076
Email >

🐦 **@proctorio**
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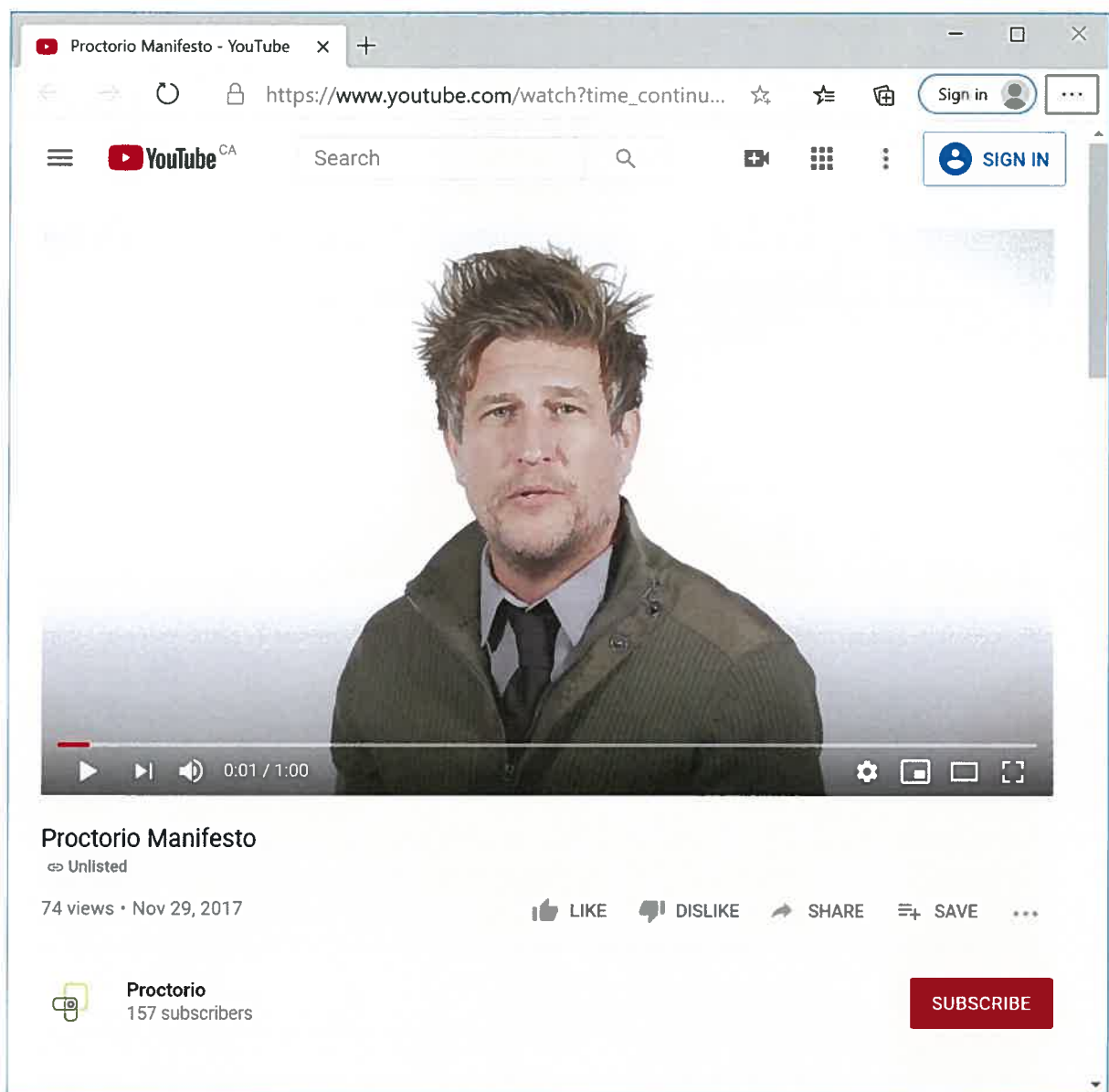
A Commissioner for taking Affidavits for British Columbia

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LINKLETTER.OPENED.CA

Sharing an Unlisted YouTube Video

Clicking the YouTube channel's profile picture takes you to the video on YouTube (figure 3)

sunset with friends

Watch later   Share
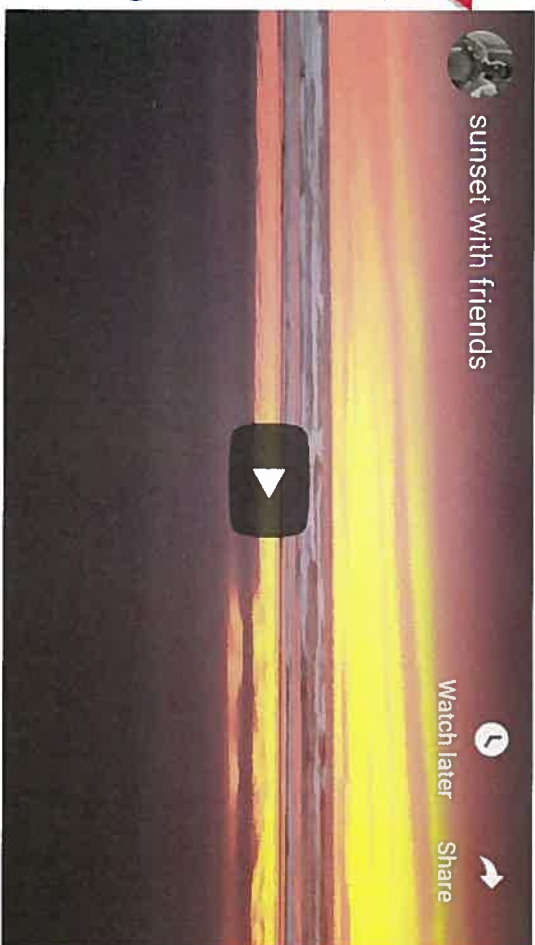
Share Button

This is Exhibit AS referred to in the
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306

LINKLETTER.OPENED.CA

Sharing an Unlisted YouTube Video

https://youtu.be/-bTLEOtE6LI

Share

Share link
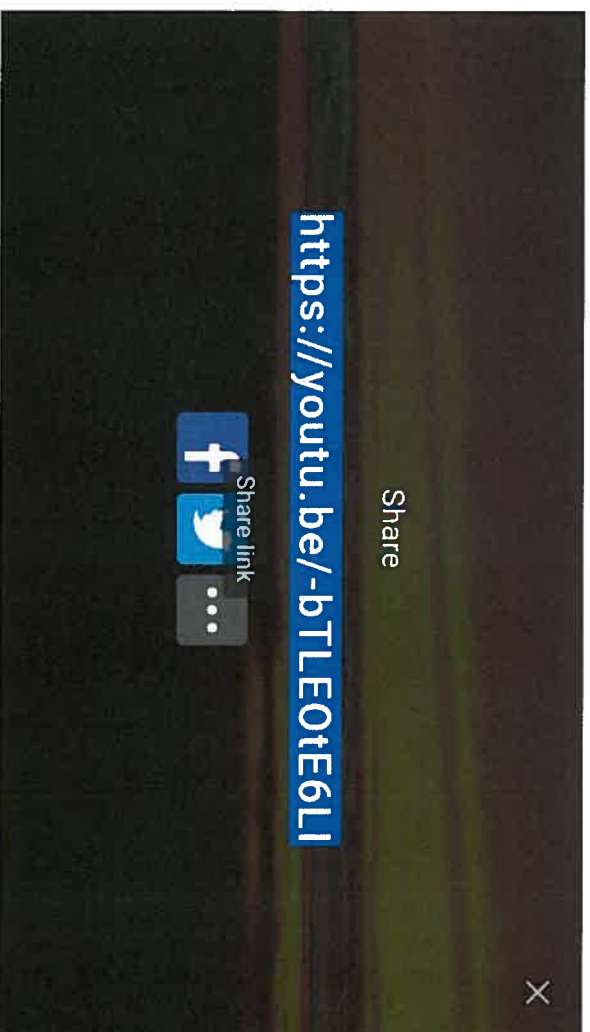
Clicking Share button displays and selects direct link.

Facebook and Twitter Share also appear. Clicking the ellipses takes you to the video on YouTube (figure 3)

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Figure 3: Video on YouTube

"Unlisted" indicator

Share Button

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Share

Embed   Facebook   Twitter   reddit   Blogger   Tumblr   COPY

https //youtu be/-bTLEOtE6Li

Start at 0.05
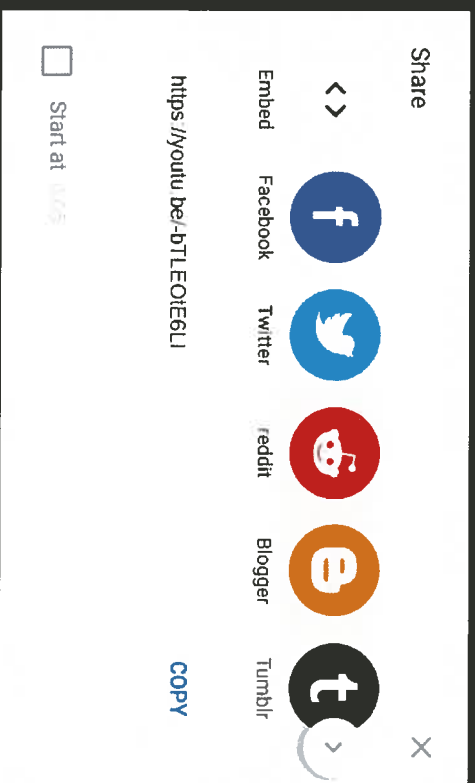
Share Button reveals ability to embed on any webpage, share to 10 different social media platforms, copy the link, or email the link

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THE UNIVERSITY OF BRITISH COLUMBIA

Instructor Guide to Proctorio at UBC

What is Proctorio?

Proctorio is an **online remote proctoring** service hosted in Canada and integrated with Canvas, so UBC students can securely take exams from anywhere. With Proctorio, each student's exam is recorded with video and audio, along with screen and keyboard activity, to promote exam integrity.

In response to the Coronavirus (COVID-19), there is **currently no charge** associated with setting up Proctorio for the 2019W term. An update on costs for future terms will be provided in May 2020.

You can now activate Proctorio in any Canvas course. Online training sessions are listed on the Keep Teaching support page[1].

HOW DOES PROCTORIO SUPPORT TAKING REMOTE EXAMS?

Proctorio helps preserve **exam integrity** by:

- Recording students' video, audio, screen, and/or keyboard activity during an exam
- Requiring identity verification from each student before an exam
- Restricting what students can do on their computers during an exam (e.g., accessing other applications, websites, and browser windows/tabs)

Proctorio's algorithms analyze behavior within the recordings and flag potential issues for review. *You* have the final say on whether any flagged activity constitutes actual misconduct.

On the student side, remote proctoring does add new stressors for students, but also gives them the **flexibility** to choose the space (and, if you allow, time) they take their exam in. They can also use their computer for responding, which is easier than writing by hand. Without physical paper exams to manage, **grading turnaround** can be faster as well.

What do I need to use Proctorio?

1. Proctorio requires using the **Chrome web browser**. Make sure you have the latest Chrome version[2] installed.

2. Then install the **Proctorio Chrome extension**[3].

3. Make sure you have set up a **Canvas course** [4].

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[1] http://keepteaching.ubc.ca/support
[2] https://www.google.com/chrome/
[3] https://getproctorio.com/
[4] https://keepteaching.ubc.ca/#set-up-canvas

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To take a Proctorio exam, students must have:

- A **desktop or laptop computer** (mobile devices will not work)
- The **Chrome web browser** with the **Proctorio Chrome extension** installed on their computer
- A working **webcam** (if you plan to record video) and **microphone** (if you plan to record audio)
- A clear **photo identification** (e.g., UBCcard)

Students should also complete the exam in a private, quiet, well-lit location with access to a reliable Internet connection.

Learn more
- [Other Proctorio system requirements](#)[5]
- [Proctorio FAQ on UBC's Keep Teaching site](#)[6]

What are key considerations for using Proctorio?

ADDRESS STUDENT CONCERNS

Be clear and specific about your intent. Students may be reassured by explicitly stating:

- Proctorio is necessary to make sure the exam experience is fair for everyone. If you engage with the exam honestly, you do not need to worry about the recording, even if something unusual or unexpected happens during your exam (e.g., a loud noise).

- Proctorio only runs when you're in an exam in your Chrome browser (you will see a shield icon in the browser address bar when it's active). There is no separate program collecting your data and no data collection once you leave your exam. You can uninstall Proctorio when you are done by going to the [Proctorio Chrome extension page](#)[7] and clicking Remove from Chrome.

- No person is watching you during the recording and only your course instructor and/or TA will review the recording afterward. Proctorio's role is limited to: a) providing temporary data storage for your video in Canada and b) running its automated algorithms to flag any moments in your video for review.

- An automated flag on your recording does not mean your instructor or TA will automatically assume you cheated or that you will receive a grade deduction. Human interpretation of the flags is essential; your instructor and/or TA makes the final call.

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[5] https://proctorio.com/system-requirements
[6] https://keepteaching.ubc.ca/faq/#proctorio-faq
[7] https://chrome.google.com/webstore/detail/proctorio/fpmapakogndmenjcfoajifaaonnkpkei

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PROVIDE A PRACTICE EXAM

Consider giving students a no-stakes practice exam (that you can also take). This will allow everyone to get familiar with the Proctorio experience, *before* being in a high-pressure, high-stakes situation. For a practice exam, consider:

1. Labelling the practice exam very clearly, so students know they don't need to study anything, and potentially offering incentives for completing it.

2. Using Proctorio settings that will match your actual exam, so students know what to expect.

3. Encouraging students to try out lots of different actions during the practice session: mimicking what they'll want to do in a real exam and trying anything you will specifically restrict (e.g., open a webpage), just to see what happens.

4. Creating practice questions for this experience that also highlight important parts of using Proctorio (e.g., "Which of the following are not allowed during Proctorio assessments?").

How do I enable Proctorio in Canvas?

No matter how you want to assess students in Canvas (e.g., quizzes, written tests, exams), you can use the Canvas Quiz tool to build your assessment.

CREATE CANVAS QUIZZES THAT USE PROCTORIO

1. Using Chrome, log in to your Canvas course, and click **Settings** in the Course Navigation.

2. Click the **Navigation tab**.

3. Find the "Secure Exam Proctor" menu item, select the **options menu** (i.e., the 3 dots), and choose **Enable**.

4. **Save** your setting changes.

5. Now click **Quizzes** in the Course Navigation.

6. Click the +**Quiz blue button**, choose the **Classic Quizzes** option, and click **Submit**.

7. In the Details tab, enter the name of your quiz. Under "Quiz Instructions", provide assessment information. (See the instructor template in the appendix for suggested content.)

8. Set the quiz option settings:
   o *Quiz type*: Graded
   o *Time limit*: How long students will have to finish the exam. Please add 5 minutes for students to complete the Proctorio setup.
   o *Availability from / Until*: The period of time the exam will be open for students before the exam automatically submits. Please add 30 minutes here for students to complete setup and deal with any technical issues.

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9. Click the **Enable Proctorio Secure Exam Proctor checkbox**, then click the **Proctorio Settings tab**.

10. Proctorio Exam Settings are separated into four categories. If you are not sure what a setting means, hover over the option in Proctorio and click the **question mark**. These settings cannot be changed once the exam has started, so please carefully choose the appropriate options.

11. We <u>highly recommend</u> the following settings, particularly for exams. Settings will become blue once you click to enable them.
    - *Recording Options*
        - **Enable**: Video, Audio, Screen, Web Traffic, Room Scan: Scan at Start (option when you click Record Room)
        - **Don't use**: Room Scan: Intelligent Scan (students may be required to redo their room scan multiple times during the exam)
    - *Lock Down Options*
        - **Enable**: Only One Screen, In Quiz Links Only (option when you click Disable New Tabs), Close Open Tabs, Disable Printing, Disable Clipboard, Block Downloads, Clear Cache, Disable Right Click
        - **Disable**: Force Full Screen (requires students to stay on the exam the whole time, which makes troubleshooting technical issues hard), Prevent Re-entry (locks students out of their exam for potentially benign behaviour, requiring administrative work by you to resolve)
    - *Verification Options*
        - **Enable**: Video, Audio, Desktop, ID, Signature
    - *In-Quiz Tools*
        - **Disable**: Calculator, Whiteboard

12. Set your Proctorio Behavior Settings:
    - *Frame Metrics***:** Indicate which student behaviours you want automatically flagged in the recordings. You can leave these levels set to Proctorio's default recommended settings, choose from preset options, or set a custom level.
    - *Exam Metrics***:** Measure abnormalities comparing one student's actions to the rest of the exams in the class. These metrics work best in larger class sizes that offer a better sample pool (50+ students); in smaller classes, it's better to leave them disabled.

13. You are now ready to add questions to your exam. This process is the same for proctored and non-proctored Canvas Quizzes. Follow the [steps for adding questions to Canvas Quizzes](https://keepteaching.ubc.ca/assignments-assessments/#quiz-questions)[8] on the Keep Teaching site.

Tips

- Note that Proctorio Exam Settings cannot be changed after any students have completed their exams, but the Behaviour Settings can.

- Proctorio cannot be enabled on the Canvas quiz type known as "New Quizzes".

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[8] https://keepteaching.ubc.ca/assignments-assessments/#quiz-questions

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Learn more
- [How to create a Canvas "Classic Quiz"](#)[9]
- [Video tutorial of Proctorio exam settings](#)[10]

How do I review Proctorio recordings?

PROCTORIO BEHAVIOR SETTINGS

Proctorio runs its algorithm on student recordings based on your **Behavior Settings**, which include Frame Metrics and Exam Metrics. **Frame Metrics** let you indicate which student behaviours you want automatically flagged in the recordings. **Exam Metrics (aka Abnormalities)** allow you to set which behaviours should also be compared against the class as a whole, with anomalies automatically flagged.

Proctorio Behaviour Settings determine an overall **Suspicion Level** to assign to each exam (based roughly on its number of flags): high (red), moderate (yellow), or low (green). Choosing more sensitive settings will trigger more suspicious (red and yellow flagged) exams.

By default, Proctorio will configure your exam using their recommended Behavior Settings, but these can be adjusted at any time. These settings are quite sensitive, thus the middle (yellow) behaviour settings are typically enough to catch potentially problematic behaviours.

After the exam, review a few flagged videos to see if settings need to be adjusted to provide a meaningful algorithmic review. Instructional teams can then choose a strategy for reviewing potentially problematic recordings and discuss what to do if a problem is confirmed.

Learn more
- [Video tutorial of Proctorio Behavior Settings](#)[11]
- [Video tutorial of Proctorio Abnormalities](#)[12]

VIEW THE PROCTORIO GRADEBOOK

After the exam, you can review outcomes in the **Proctorio Gradebook**, accessible within each proctored Canvas Quiz. You'll get a quick Suspicion Level colour indicator to show you if any exams should be reviewed further and where potential issues in each flagged exam occurred.

1. Make sure you are in a private location to respect student privacy.

2. Using Chrome, log in to your Canvas course, and click **Quizzes** in the Course Navigation.

3. Click the **quiz** you wish to view.

4. On the right sidebar, click **View Proctorio Gradebook.**

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[9] https://community.canvaslms.com/docs/DOC-12943-4152724267
[10] https://youtu.be/ayh1R02pLz0
[11] https://youtu.be/92MXs6YuReE
[12] https://youtu.be/DcszbOfYe6o

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5. The Suspicion Level column shows color indicators for each exam, with high Suspicion Level exams indicated with red.
   - *Remember*: Suspicion Level is determined by Behavior Settings that you can adjust, if you think Proctorio has flagged too many or too few exams.

6. Click the **row** of the exam you would like to review.

7. Each exam contains everything you asked Proctorio to record, such as video/audio recording, desktop recording, and student identity verification.

8. When Proctorio has flagged potentially suspicious activity, it will be indicated in red along the recording timeline. Scan through these moments to determine whether any flagged activity constitutes actual misconduct.

Tips

- If more than 20% of your exams are classified with high Suspicion Level, you may want to spot-check a few recordings and adjust your Behaviour Settings. It is unlikely this many students would actually cheat.

- Review high-suspicion moments in videos by jumping to the flagged section(s) in each recording timeline instead of watching the whole video.

- Choosing *low* Suspicion Level recordings for random checks is also recommended.

Learn more
- [Video tutorial of Proctorio Gradebook](#)[13]
- [Video tutorial of Proctorio behavior flags](#)[14]

Where can I get more support with Proctorio?

- You can reach out to support staff via the [Keep Teaching support page](#)[15]. They can help you or help with issues you're having with students accessing Canvas or Proctorio.

- You can share UBC's [Proctorio student guide](#)[16] with students.

- You can send students needing technical support to [Proctorio Support](#)[17].
  - Inside an active exam: Students can also click the shield icon in their web browser, address bar then click Live Chat.
  - Outside an exam: Students can also connect via phone (1-866-948-9087) or email ([support@proctorio.com](#)).

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[13] https://www.youtube.com/watch?v=b2BIbatkTyY
[14] https://youtu.be/OG1jwAugTOs
[15] https://keepteaching.ubc.ca/support/
[16] https://ctlt-act-2020.sites.olt.ubc.ca/files/2020/03/proctorio-instructor-guide.pdf
[17] https://proctorio.com/support

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Appendix: Instructor Template

The following is based on a template created by Fareed Teja for UBC Sauder School of Business and modified by Brian Powell at the Centre for Teaching & Learning at UBC-Okanagan. We encourage you to reuse and adapt it in the instructions for your Canvas quiz.

Note: Any content in [brackets] should be modified or verified by you before posting.

The [course code] [exam name] will take place on **[day], [date], [year] at [time]**. The exam will be [#] minutes long. You will be taking this exam remotely from a location of your choice, and your exam will be proctored online by a service called Proctorio. Proctorio is embedded in Canvas, and will record your [screen, webcam, and microphone].

REQUIREMENTS

In order to ensure a smooth exam experience, you must have:

- A **desktop or laptop computer** (mobile devices will not work)
- The **Chrome web browser** with the **Proctorio Chrome extension** installed
- A working [**webcam** and **microphone**]
- A clear **photo identification** (e.g., UBCcard)
- A private, reliable, quiet, well-lit location with access to a reliable Internet connection

WHAT YOU NEED TO KNOW ABOUT PROCTORIO

- Proctorio is necessary to make sure the exam experience is fair for everyone. If you engage with the exam honestly, you do not need to worry about the recording, even if something unusual or unexpected happens during your exam (e.g., a loud noise).

- Proctorio only runs when you're in an exam in your Chrome browser (you will see a shield icon in the browser address bar when it's active). There is no separate program collecting your data and no data collection once you leave your exam. You can uninstall Proctorio when you are done by going to the Proctorio Chrome extension page and clicking Remove from Chrome.

- No person is watching you during the recording and only [I and/or the teaching assistants] will review the recording afterward. Proctorio's role is limited to: a) providing temporary data storage for your video in Canada and b) running its automated algorithms to flag any moments in your video for review.

- An automated flag on your recording does not mean [I and/or the teaching assistants] will automatically assume you cheated or that you will receive a grade deduction. Human interpretation of the flags is essential; we make the final call.

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WHAT YOU NEED TO KNOW BEFORE YOU START

Once you start the exam, please **do not refresh your browser, use browser buttons, or navigate away from the exam screen until the exam has been submitted**.

If you are asked to enter a password or access code (Proctorio does not require either) or receive an error message:

1. Ensure you are using the latest version of the Chrome web browser and have the Proctorio Chrome extension installed.
2. Clear your browser history and cache in Chrome: https://support.google.com/accounts/answer/32050?co=GENIE.Platform%3DDesktop&hl=en
3. Uninstall the Proctorio extension: https://support.google.com/chrome_webstore/answer/2664769?hl=en
4. Reinstall the Proctorio extension: https://getproctorio.com/

If you are still unable to access your exam, please contact technical support.

Technical support is provided by Proctorio Support (https://proctorio.com/support). To reach them:

- Inside an active exam: Click the shield icon in your web browser address bar, then click Live Chat.
- Outside an exam: Connect via phone (1-866-948-9087) or email (support@proctorio.com).

When you click to take the exam, you will need to complete some technical pre-checks to make sure everything is working. You will also be asked to rotate your webcam 360 degrees to do a full room scan. Please ensure that you show your testing surface (i.e., your desk), and everything around you.

Note that if you run out of time, your exam will automatically submit, so be aware of how much time remains. When you are done, manually click the "Submit" button at the bottom of the screen.

Good luck on your exam!

A Guide from UBC's Keep Teaching Website (keepteaching.ubc.ca)

> Create a Canvas assessment that uses Proctorio

> Understand Proctorio behaviour settings

> Use the Proctorio Gradebook

Use the Proctorio Gradebook

After the exam, you can review outcomes in the **Proctorio Gradebook**, accessible within each proctored Canvas assessment. You'll get a Suspicion Level colour indicator to show if any exams should be reviewed further and where potential issues in each flagged exam occurred.

1. When reviewing recordings, make sure you are in a private location to respect student privacy.

2. Using Chrome, log in to your Canvas course, and click **Quizzes** in the Course Navigation.

3. Click the **quiz** you wish to view.

4. On the right sidebar, click **View Proctorio Gradebook.**

5. The Suspicion Level column shows color indicators for each exam, with high Suspicion Level exams indicated with red.

   ■ Suspicion Level is determined by Behavior Settings you can adjust, if you think Proctorio has flagged too many or too few exams.

6. Click the **row** of the exam you would like to review. Each exam contains everything you asked Proctorio to record, such as video, audio, screen, and student identity verification.

7. When Proctorio has flagged potentially suspicious activity, these activities will be indicated in red along the recording timeline. **Scan** through these moments to determine whether any flagged activity constitues actual misconduct.

⌂ Tips

■ **If more than 20% of your exams are classified with high Suspicion Level**, you may want to spot-check a few recordings and adjust your Behaviour Settings. It is unlikely this many students would actually cheat.

■ **Review high-suspicion moments in videos by jumping to the flags** in each recording timeline, instead of watching the whole video.

■ **Pick a few low Suspicion Level recordings for random checks** to ensure the algorithms are flagging what you want them to.

■ Learn more in Proctorio's video tutorials

   ■ Proctorio Behavior Settings

   ■ Proctorio Abnormalities

   ■ Proctorio Gradebook

   ■ Proctorio behavior flags

■ **Try not to stress about reviewing every minute** of the recordings. Remote proctoring in and of itself naturally deters academic dishonesty by adding barriers to searching and colluding online

Where can I get more support with Proctorio?

Technical support

If you have trouble with Canvas or Proctorio:

■ Contact your faculty's Instructional Support Unit as your first point of contact

■ Contact us for further assistance

Learn more

■ Read UBC-specific answers to Proctorio frequently asked questions on the Keep Teaching site

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twitter.com/Linkletter/status/1297750890242142209

← **Tweet**

Ian Linkletter
@Linkletter

ooo

"Proctorio technology offers specialized exam analytics that we call Abnormalities. Each of the Abnormalities were created to give you strategic intelligence to flag outlier students who are displaying behaviors that are much different from their peers." Q
youtube.com/watch?v=DcszbO...

9:21 PM · Aug 23, 2020 · Twitter Web App

ılı View Tweet activity

1 Retweet   **2** Quote Tweets   **2** Likes

This is Exhibit AY referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

A Commissioner for taking Affidavits for
British Columbia

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twitter.com/Linkletter/status/1298094344298090498

← **Thread**

Ian Linkletter
@Linkletter

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Hello everyone it is 8:05 PM here.

This is an unlisted video from Proctorio's YouTube channel showing how the Behaviour Flags function works. You can configure how much to scrutinize the eye movement and eye movement of your students.

It is now 8:06.

youtube.com/watch?v=OG1jwA...

8:06 PM · Aug 24, 2020 · Twitter Web App

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Ian Linkletter @Linkletter · Aug 24   ⋯
Replying to @Linkletter
*head movement and eye movement

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(**Add another Tweet**)

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Ian Linklett
@Linkletter

Let's go exploring

◎ Vancouver, BC

▦ Joined March

Ian Linkletter
@Linkletter   [**Follow**]   ⌄

Hey Twitter, it's 8:21 PM.

This is an unlisted video from Proctorio's YouTube channel about Display Room Scan. Display Room Scan allows you to click and drag through a panorama of the student's personal home.

It's 8:23 PM!

youtube.com/watch?v=qbYVv6 …
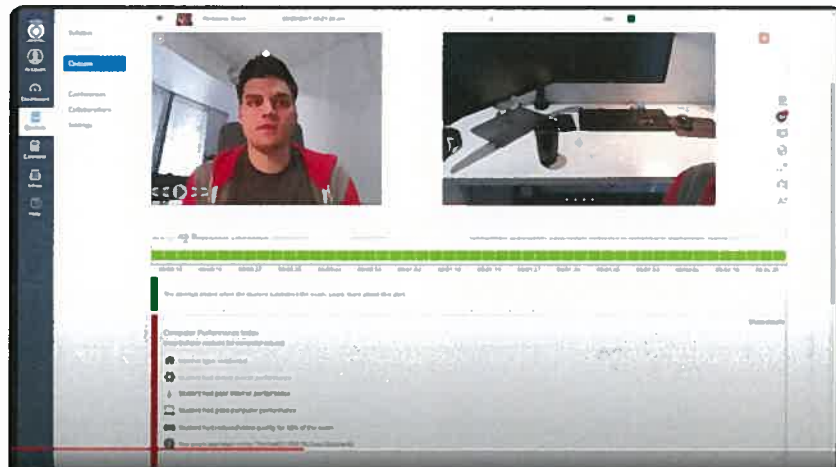
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← **Thread**

Ian Linkletter @Linkletter · Aug 24 ⋯⋯⋯

I think I may have bought some time. There are videos from Proctorio's instructor help. I think it's important for us in our communities to know how this software functions so we can criticize it. I will keep sharing information, OK?

💬 2　　🔁 13　　♡ 41　　↑　　�ⅰⅼ

Ian Linkletter ⋯⋯⋯
@Linkletter

Replying to @Linkletter

8:43 PM

This video from Proctorio's YouTube channel shows how the Abnormal Eye Movement function works. This is the one that will show you, beyond a doubt, the emotional harm you are doing to students by using this technology.

youtube.com/watch?v=Otl6I_...

8:44 PM · Aug 24, 2020 · Twitter Web App

ⅰⅼ View Tweet activity

3 Retweets　**3** Quote Tweets　**19** Likes

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Ian Linkletter
@Linkletter

∘∘∘

Replying to @Linkletter

8:44 PM

This video from Proctorio's YouTube channel shows how the Abnormal Head Movement function works. This is the one that will identify students with medical conditions that affect their head movement. They will get a higher Suspicion Level for it.

youtube.com/watch?v=uK34sl...

8:46 PM · Aug 24, 2020 · Twitter Web App

ili View Tweet activity

1 Quote Tweet   **12** Likes

💬   🔁   ♡   ⬆

This is Exhibit BC referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

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twitter.com/Linkletter/status/1298104733899481089

← **Thread**

♡ 1   ⊔ 1   ♡ 12   ↑   �ⅼⅼ

Ian Linkletter
@Linkletter

Replying to @Linkletter

8:46 PM

This video from Proctorio's YouTube channel shows how you can configure the Record Room feature. This feature gives you the ability to configure whether you will make students record their room at the start of an exam or throughout it.

youtube.com/watch?v=omK_Zt...

8:47 PM · Aug 24, 2020 · Twitter Web App

ⅼⅼ View Tweet activity

1 Retweet   **9** Likes

♡   ⊔   ♡   ↑

This is Exhibit BD referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

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twitter.com/Linkletter/status/1298105787361792003

← **Thread**

💬 1   🔁 1   ♡ 9   ⬆   �"|

Ian Linkletter
@Linkletter   •••

Replying to @Linkletter

8:49 PM and then I need to go on the run!

This video about Behaviour Settings shows you how to create your own custom settings for what behaviour makes someone suspicious. The important thing is that the choice is yours, not theirs, got it?

youtube.com/watch?v=92MXs6...

8:51 PM · Aug 24, 2020 · Twitter Web App

⭰ View Tweet activity

1 Quote Tweet   **10** Likes

💬   🔁   ♡   ⬆

Irwin DeVries @IrwinDev · Aug 24   •••
Replying to @Linkletter
This is hideous.

💬   🔁   ♡ 1   ⬆

Em::<🐟>() @leftpaddotpy · Sep 3   •••
Replying to @Linkletter
another, from a public source, this one's just an intro to their gradebook UI (no video of the UI itself), but it reiterates the fact that students are sorted by suspicion (as you said, wtf)

Proctorio Gradebook Review Best
🔗 youtube.com

💬 1   🔁   ♡   ⬆

Em::<🐟>() @leftpaddotpy · Sep 3   •••
An even more boring one, though it shows the interface I guess:
youtube.com/watch?v=w8RVOO...

💬   🔁   ♡   ⬆

Clea Mahoney @CleaMahoney · Aug 25   •••
Replying to @Linkletter
Is there video of @proctorio removing all of these from their channel? 😂

💬   🔁 1   ♡   ⬆

pedro @gerontint · Aug 25   •••
Replying to @Linkletter
Videos removed by uploader, it seems...

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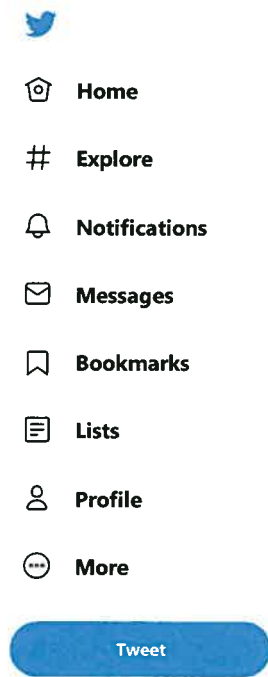
Tweet

Ian Linkletter
@Linkletter

10:13 PM and all the videos are gone.

Ian Linkletter @Linkletter · Aug 24
I think I may have bought some time. There are videos from Proctorio's instructor help. I think it's important for us in our communities to know how this software functions so we can criticize it. I will keep sharing information, OK?
Show this thread

10:14 PM · Aug 24, 2020 · Twitter Web App

View Tweet activity

6 Retweets   **4** Quote Tweets   **30** Likes

This Tweet was deleted by the Tweet author. Learn more

Jay Sherman's March @JGKelley · Aug 24
Who out there backed em up

♡ 1   � 5

1 more reply

Autumm Caines is a Liminal Space @Autumm · Aug 24
Replying to @Linkletter
Wow - so does this mean that all of their help documentation for their customers have broken links now?

♡ 1   ♡ 4

Ian Linkletter @Linkletter · Aug 25
Yep! Maybe if somebody leaks the source code they'll delete the company.

♡ 1   ♡ 4

1 more reply

Bonnie Stewart @bonstewart · Aug 25
Replying to @Linkletter
Ian, may i screencap this for a presentation later this week?

♡ 2   ♥ 3

Ian Linkletter @Linkletter · Aug 25
Of course. The more we can share information in our communities, the more difference we can make.

♡ 1   ♡ 2

1 more reply

Home
Explore
Notifications
Messages
Bookmarks
Lists
Profile
More

Tweet

This is Exhibit BF referred to in the
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before me on 15 Oct 2020.

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British Columbia

Ian Linkletter
@Linkletter

329

Home

Explore

Notifications

Messages

Bookmarks

Lists

Profile

More

Tweet

Relevant people

Ian Linkletter
@Linkletter
Let's go exploring! He/Him

What's happening

US elections · 3 hours ago
Trump paid $750 in federal income taxes in 2016 and 2017, New York Times reports
Trending with: Melania

#StarbucksStarDays
More Stars. More Rewards.
Promoted by Starbucks Canada

Politics · Trending
Deutsche Bank
74.3K Tweets

Toronto Star ✔ · Yesterday
Can Canada's border be reopened safely in a COVID-19 world?

Politics · Trending
Ivanka
158K Tweets

Show more

Ian Linkletter
@Linkletter

330

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Proctorio Instructor Guide

proctorio

Proctorio is an online remote proctoring tool that allows you to
give an invigilated quiz or exam in Canvas. In place of a physical
person in the room with your students, you can have Proctorio
record their webcams, microphones, screens, and any websites
they visit during the assessment.

After an exam, Proctorio's algorithms automatically look over student
recordings. You set the behaviours you want flagged as unusual activities
by the algorithms. You and/or your teaching assistants then review the
recordings and flags to determine whether any activity constitutes actual
misconduct. The encrypted recordings are retained for two years before
they are deleted.

Cost	✔	Free (funded in response to COVID-19 through April 2021)
Bandwidth	⚠	High demand
Canvas Integration	✔	Works within Canvas
Privacy	✔	Proctorio is FIPPA (https://universitycounsel.ubc.ca/subject-areas/access-and-privacy-general/access-to-information/about-fippa/) compliant and data is stored securely in Canada
Similar UBC-Supported Tools		LockDown Browser (/guides/lockdown-browser) is also centrally supported

What can I use it for?

With Proctorio, you can help preserve exam integrity in Canvas courses in
three main ways:

- Requiring identity verification from each student before an exam

- Recording students' exam video, audio, screen, and/or keyboard activity

- Restricting what students can do on their computers during an exam (e.g., no printing, copying, accessing other websites)

What do I need to use Proctorio?

A desktop or laptop computer with Chrome web browser

Proctorio must be used on a **desktop or laptop computer** (mobile devices will not work), with the latest Chrome web browser (https://www.google.com/chrome/) and Proctorio Chrome extension (https://getproctorio.com/) installed.

- Proctorio can be used on Windows, Mac, Linux, and Chrome Operating Systems. You can view the minimum technical requirements (https://proctorio.com/support#minReqs) on Proctorio's site.

Audio/visual equipment

Students must also have a **webcam** and **microphone**, but these are not required for instructors and teaching assistants to review their recordings.

A Canvas course

Protorio only works in Canvas courses at UBC.

👍 **Tips**

- **If students have trouble meeting requirements, help accommodate them**.

  - For technical issues, direct them to UBC's Proctorio student guide (https://keepteaching.ubc.ca/files/2020/03/proctorio-student-guide.pdf).

  - If they have financial barriers to accessing online classes and exams, encourage them to speak with a financial advisor (https://keeplearning.ubc.ca/support/#finances).

  - If any students are unable to meet requirements due to a disability, direct them to an accessibility advisor (https://keeplearning.ubc.ca/support/#academics).

- **One possible alternative to Proctorio is LockDown Browser.** Visit the LockDown Browser instructor guide (https://lthub.ubc.ca/guides/lockdown-browser/) for more information.

How do I use Proctorio?

You first need to install the Proctorio extension in Chrome in order to create your exam.

Click any bar below for instructions and tips for using Proctorio in Canvas.

> Install Proctorio in Chrome

> Prepare students for Proctorio exams

> Create a Canvas assessment that uses Proctorio

> Understand Proctorio behaviour settings

Understand Proctorio behaviour settings

Proctorio runs its algorithms on student recordings based on your **Behavior Settings**, which include Frame Metrics and Exam Metrics. **Frame Metrics** let you indicate which student behaviours you want automatically flagged in the recordings. **Exam Metrics (aka Abnormalities)** allow you to set which behaviours should also be compared against the class as a whole, with anomalies automatically flagged.

Proctorio Behaviour Settings determine an overall **Suspicion Level** to assign to each exam, based roughly on its number of flags: high (red), moderate (yellow), or low (green). Choosing more sensitive settings will trigger more suspicious (red and yellow flagged) exams.

By default, Proctorio will configure your exam using their recommended Behavior Settings, but these settings can be adjusted at any time. They are quite sensitive, thus the middle (yellow) behaviour settings are typically enough to catch potentially problematic behaviours.

After the exam, review a few flagged videos to see if settings need to be adjusted to provide a meaningful algorithmic review. Instructional teams can then choose a strategy for reviewing potentially problematic recordings, including when and how to reach out to students with questions and what to do if a problem is confirmed.

Where can I get more support with Proctorio?

Technical support

If you have trouble with Canvas or Proctorio:

- Contact your faculty's Instructional Support Unit
  (http://lthub.ubc.ca/support/instructional-units/) as your first
  point of contact

- Contact us for further assistance:
  604 827 4775 or lt.hub@ubc.ca (mailto:lt.hub@ubc.ca) or visit
  the LT Hub online
  (https://ca.bbcollab.com/guest/a16a9988f1154cb7be11c58ac2a4edac)

- Contact Proctorio directly:
  1 866 948 9087 or support@proctorio.com
  (mailto:support@proctorio.com)

**If students contact you with technical issues while taking a
Proctorio exam:**

- Contact Proctorio directly:
  1 866 948 9087 or support@proctorio.com
  (mailto:support@proctorio.com)

- Inside an active exam, students can access live chat by clicking
  the shield icon located in the Chrome browser address bar, then
  clicking Live Chat

- Share UBC's Proctorio student guide
  (https://keepteaching.ubc.ca/files/2020/03/proctorio-
  student-guide.pdf)

  Learn more

  - Read UBC-specific answers to Proctorio frequently asked questions
    (https://keepteaching.ubc.ca/support/#TechnologyFAQ-
    2#proctorio-faq) on the Keep Teaching site.

  - Check for any upcoming UBC Proctorio workshops
    (https://keepteaching.ubc.ca/support/#ContactsTraining-
    0#workshops) on the Keep Teaching site.

- Although the recordings are scanned by Proctorio's algorithms, the footage is only available to the appropriate users at UBC. No person at Proctorio can access the recordings or data, as they are stored using zero-knowledge encryption, meaning Proctorio does not have the key to decode the encryption.

Instructor template

The following is based on a template created by Fareed Teja for UBC Sauder School of Business and modified by Brian Powell at the Centre for Teaching & Learning at UBC-Okanagan. We encourage you to reuse and adapt it in the instructions of your Canvas quiz.

Please click the bar below to see and copy the text.

> Proctorio instructor template

« See all tools (/guides/all/)

Learning Technology Support Hub
Irving K. Barber Learning Centre
2.27 – 1961 East Mall
Vancouver, BC Canada V6T 1Z1
Tel 604 827 4775
Email LT.hub@ubc.ca (mailto:LT.hub@ubc.ca)

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BCIT™

Job Aid

Proctorio Options Explained

Proctorio is a remote exam proctoring service that ensures the integrity of learning assessments.

This job aid explains the different options in Proctorio for securing remote exam delivery. The options are categorized according to their effectiveness and risk to student privacy.

Recommended
- Features that BCIT recommends for use because they provide practical security measures and are not considered invasive to student privacy.

Use with Caution
- Features that may have security benefits but that are more invasive and, therefore, require advanced notice and an opt-out option for students not willing to assume the risk.
- Features with a level of complexity for use that may be beyond the ability of some students.

Not Recommended
- Features that do not provide reasonable security, pose unreasonable expectations on students, or are overly invasive.

Do Not Use
- Features that you are strongly encouraged not to use. Alternatives are available in the Learning Hub.

Contents

Exam Security in General

While Proctorio provides a very powerful suite of features, no technology should be considered a replacement for pedagogically sound assessment design.

Technologies such as Proctorio are invasive when it comes to controlling the student's computer during an exam and, therefore, are open to failures caused by user error, network connections, user hardware and competing software. These are facts of life in the computer world, not failings of a system, and they should be expected from time to time.

When selecting the Proctorio features to use, BCIT recommends that you first consider the nature of your assessment, your student profile, and your overall assessment model. Then, choose only the Proctorio features that you feel enhance all of these. The more complex you make the Proctorio experience, the higher the risk of problems during the student experience.

Consider your time because post-exam data reviews can get more complex as you select more Proctorio monitoring and reporting features. Factor how much time it will take for the number of students you need to assess.

Privacy Compliance

Proctorio has been approved for use at BCIT, as a temporary option, to support remote testing. While recordings are not stored in Canada, the easement of this requirement, in BC's privacy legislation, enables its use. In addition, the method of data encryption used by Proctorio further secures user data while in transit and storage.

Instructors should consider the BCIT's privacy compliance model that requires students to be informed of specific prerequisites, including computer hardware, required to successfully complete the course. Generally, we are not able to "surprise" students with additional requirements after they have registered. In the case of the COVID-19 emergency conditions, this requirement has not been possible when imposing unanticipated exam monitoring requirements mid-term.

There may be cases where students are not able to meet the technical requirements of the options chosen for individual exams. These may include cases where:

- Students do not have access to the required hardware, such as webcams or microphones.
- Students are not able to setup their remote testing environment to eliminate exposure to the privacy of others.

In cases of reasonable objections, program faculty should plan to accommodate these learners in other ways such as:

- Arranging for the student to delay their learning and assessment until face-to-face exam supervision becomes available.
- Arranging for the student's transfer to a future term to complete their learning.
- Alternative assessment options.

Proctorio Setup

Please refer to the job aid Remote Exam Proctoring: Setup for step-by-step instructions on how to set up your system to use Proctorio.

- Proctorio requires the use of the Chrome browser as well as a Proctorio plug-in for both the instructor and the students. The use of any other browser will not permit the exam to start.
- Proctorio requires a computer, PC or Mac. The use of mobile devices will not permit the exam to start.

Support

- Educational Technology Services (ETS)
    - techhelp@bcit.ca—604-412-7444/1-800-351-5533 (option 2)
- Your school's LTC liaison
    - https://www.bcit.ca/ltc/contact/liaisons.shtml

Recommended Features

<table>
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Computer-Based Abnormalities

Abnormalities between the actions of an individual student and those of the rest of the class. Flags statistical differences in a student's behaviour for instructor follow-up.

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Navigating Away

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- Will report when a student has left the Learning Hub exam screen significantly more or less than the other students taking the same exam.
- **When to enable:** closed-book exams
- **When not to enable:** exams that are locked down with the **Force Full Screen** option
- **Flagging:**
  - o **Abnormally high**: A student would be flagged with excessively high navigating away if they used external programs or websites significantly more than the rest of the class. This could indicate that the student was using unauthorized materials or was struggling to understand content external to the exam.
  - o **Abnormally low**: A student who is navigating away significantly less may have had access to answers before starting the exam and would not need to interact with external resources as often as the rest of the class.
- **How to review**: Use the Proctorio **incident log** to find locations where the student was navigating away from the quiz page and review those sections of the session tracking.
- **Complimentary Features**:
  - Use **Record Screen** to review what the student was looking at throughout the exam. This will show any external websites or programs.
  - Use **Record Web Traffic** to review any external websites that were accessed during the exam.

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Keystrokes

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- Will report when a student types on the keyboard significantly more or less than the other students.
- **When to enable**: written-response exams
- **When not to enable**: multiple-choice exams
- **Flagging**:
  - o **Abnormally high**: A student may require more keystrokes on a written-response exam if they are having difficulties with the answers. If a student is struggling to come up with the correct answers, they will use additional keystrokes as they change their responses.
  - o **Abnormally low**: A student performing fewer keystrokes could indicate that the student had access to the answers or was lifting their responses from an outside source.
- **How to review**: Use **Record Screen** to view what the student was looking at throughout the exam. This can show if the student is consistently changing their answers or if they have pasted in values received externally. If the student had an abnormally low number of keystrokes, look for other ways that the student could have possibly brought in answers. Use the Proctorio **incident log** to find areas where the student has copied and pasted values.

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</table>
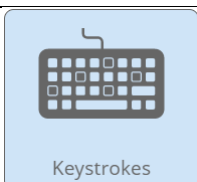
Copy & Paste	- Will report when a student has copied or pasted values significantly more or less often than the other students.
	- **When to enable**: exams that allow students to use the clipboard
	- **When not to enable**: exams that have **Disable Clipboard** enabled
	- **Flagging**:
	  - **Abnormally high**: An attempt may have a higher amount of clipboard activity if the student copied material into the exam or took question material out of the exam.
	  - **Abnormally low**: Some exams may require the student to copy and paste formulas, long digits, or phrases into the exam. When a student has performed a much lower number of copying and pasting actions, it may indicate that they have access to the answers.
	- How to review: Use **Record Screen** to determine what the student was looking at throughout the exam. This will show what the student copied and pasted and other programs or websites that could have been used to take material from or paste material into. Use the Proctorio **incident log** to find instances where the student has copied and pasted.

Browser Resize	- Will report when a student has resized the browser significantly more or less than the other students have.
	- **When to enable**: open-internet or open-program exams
	- **When not to enable**: locked-down exams
	- **Flagging**:
	  - **Abnormally high**: Students who attempt to hide unauthorized materials behind the browser may resize the browser to make them visible.
	  - **Abnormally low**: Students will need to adjust the size of their browser or minimize it on exams that require the use of additional programs. If a student has an abnormally low amount of resizing on exam environments such as this, it could indicate that they had access to the answers.
	- **How to review**: Use **Record Screen** to determine what the student was looking at throughout the exam. This will show what the student has behind the quiz page or what becomes visible by resizing the browser. Use the Proctorio **incident log** to find instances where the student has resized the browser.

Mouse Movement	- Will report when a student has moved the mouse significantly more or less than the other students.
	- **When to enable**: multiple-choice exams
	- **When not to enable**: free-response exams
	- **Flagging**:
	  - **Abnormally high**: If the student has moved the mouse significantly more often than the rest of the class, their attempt will be flagged with abnormally high mouse movement. This could indicate that the student was struggling to answer the questions and interacted with the quiz.
	  - **Abnormally low**: If the student has moved the mouse significantly less often than the rest of the class, their attempt will be flagged with abnormally low mouse movement. This could be an indication that the student had received the answers before the start of the test.
	- **How to review**: Check to see if the student scored an unusual grade and taken longer or shorter than the rest of the class. Use **Record Screen** to see what the student was looking at, how often they changed questions, and the length of time it took to answer questions.

Scrolling	• Will report when a student has scrolled within the quiz page significantly more or less than the other students.
	• **When to enable**: open-internet or open-program exams
	• **When not to enable**: locked-down exams
	• **Flagging**:
	   • **Abnormally high**: If the student has scrolled significantly more often than the rest of the class, their attempt will be flagged with abnormally high scrolling. This could indicate that the student was struggling to answer the questions and interacted with the quiz page more often than the rest of the students.
	   • **Abnormally low**: If the student has scrolled significantly less often than the rest of the class, their attempt will be flagged with abnormally low scrolling. This could indicate that the student had received the answers before the start of the test. In this situation, the student would not need to interact with the quiz page as much as the rest of the class because they would not review or change their responses.
	• **How to review**: Check to see if the student has scored an unusual grade and taken longer or shorter than the rest of the course. Use **Record Screen** to see what the student was looking at and take note of how often they changed questions, and the length of time it took to answer questions.

Clicking	• Will report when a student has clicked the mouse significantly more or less than the other students.
	• **When to enable**: multiple-choice exams
	• **When not to enable**: open-book or lockdown exams
	• **Flagging**:
	   • **Abnormally high**: If the student has clicked the mouse significantly more often than the rest of the class, their attempt will be flagged with abnormally high mouse clicking. This could indicate that the student was struggling to answer the questions and interacted with the quiz page more often than the rest of the students. This would show that the student changed their responses more often than the rest of the class.
	   • **Abnormally low**: If the student has clicked the mouse significantly less often than the rest of the class, their attempt will be flagged with abnormally low mouse clicking. This could be an indication that the student had received the answers before the start of the test. In this situation, the student would not need to interact with the quiz page as much as the rest of the class as they will not review or change their responses.
	• **How to review**: Check to see if the student has scored an unusual grade and took longer or shorter than the rest of the class. Use **Record Screen** to see what the student was looking at, how often they changed questions, and the length of time it took to answer questions.

Environmental Abnormalities	

Head and Eye Movement	• Will report when a student has looked away from the computer significantly more or less than the other students.
	• **When to enable**: webcam-recorded exams
	• **When not to enable**: exams without video recorded
	• **Flagging**:
	  • **Abnormally high**: Students who look away from the quiz page consistently will be flagged. This could indicate that the student is looking at unauthorized materials in closed-book exams. This could also indicate that a student is struggling on open-book exams or where calculations need to be performed.
	  • **Abnormally low**: Students who do not look away from the quiz page will be flagged. It is normal for students to look away from the exam page when thinking. If the student does not look away, it could indicate that they had access to the answers before starting the exam. In open-book exams, where students need to use reference material or perform calculations, students with abnormally low head movements may have received answers before starting the exam.
	• **How to review**: Use the Proctorio **incident log** to find locations where the student is looking away from the quiz page. Check to see if the student scored higher than usual and spent less time on the exam compared to the rest of the class.

Multi-Face	• Will report when multiple people appear in the exam video.
	• **When to enable**: webcam-recorded exams
	• **When not to enable**: exams without video recorded
	• **Flagging**:
	  • **Abnormally high**: This could indicate that the student is getting help from others during the exam.
	  • **Abnormally low**: For group exams, this could indicate that one student is doing a substantial amount of the work and the group is not collaborating.
	• **How to review**: Use the Proctorio **incident lo**g to find the locations where multiple faces were detected. Use audio and video to determine if there are other people assisting the student with the exam.

Technical Abnormalities	

Exam Collusion	• Will report when multiple students take the exam at the same time on the same internet connection. This could indicate that students were working together.
	• **When to enable**: remote exams taken during an exam window
	• **When not to enable**: exams taken at the same time in the same location (simultaneous, in-person), such as BCIT labs or test centres.
	• How to Review:
	  o A red collusion icon in the exam attempt indicates when multiple students took the same exam, on the same IP address, within 15 minutes of each other.
	  o Use the abnormality to find the names of the other students who were taking the exam at the same time on the same connection. Use the **Geo-location** tool to view the internet type and location to determine what connection the students took the exam on. Use the **Video Player** and **Room Scan** to see if they were in the same room.

Recording Options	

Record Screen	• Takes screenshots of the student's computer desktop while they are in the exam.
	• Allows the instructor to view exactly what the student was seeing on their monitor, including other programs, websites, etc.
	• Proctorio will take screenshots when the following are triggered:
	  • student answers a question
	  • student clicks the mouse
	  • student copies values
	  • student pastes values
	  • student resizes their browser
	  • student leaves the exam page
	• The screenshots are available within the video player by accessing the **Exam Replay** mode after the exam period has ended.
	• Only one screen can be recorded. We recommend that this option be paired with the **Only One Screen** exam setting.
	• While reviewing the recording of the screen in the Proctorio **Gradebook**, keep in mind that **Record Screen** doesn't update in real time. It updates using event triggers.
	  • Keystrokes from a keyboard do not count as a trigger.
	  • Clicking does count as a trigger.
	• The screen recording updates every 30 seconds minimum if no triggers are detected.

Record Web Traffic	• Records web pages visited during the exam. • When this option is enabled, the URL of the website will be collected as well as a screenshot of the page that the student is viewing. • A screenshot is taken in case a student is accessing materials that are behind a login, such as using a web chat application or browsing a forum. The screenshot will provide a view of the page exactly how the student saw it. • Webpages and screenshots will be available in the **Incident Log** of the Proctorio exam video player and in the **Web Traffic Index**. To ensure that these events are recorded in the Incident Log, the **Flag New Windows or Tabs** behaviour setting must be set to have a weight of one or more.
Clear Cache	• Removes all traces of the exam from the student's computer after completion. • Clears any temporary files stored in the browser or hard drive that were cached after the start of the exam. • Prevents students from searching temporary internet files to replicate the exam.

Enhanced Student Experience	
\n\nBasic Whiteboard	• Can replace the use of paper notes during exams.\n• Drastically minimizes head- and eye-movement suspicion flags because the student will not have to look away from the screen when using a whiteboard.\n• The student can access the whiteboard at any time during the exam, and the following tools will be available:\n • pencil\n • paint bucket\n • text/type\n • undo the last action\n • clear entire board
\n\nBasic Calculator\n\n\n\nScientific Calculator	• Keeps the student's mathematical processes and attention inside the quiz.\n• Drastically minimizes head- and eye-movement suspicion flags because the student will not have to look away from the screen when performing calculations.\n• Together with the **Record Screen** feature, will allow you to keep an eye on the types of equations and calculations performed during an exam.\n• Has two different options:\n\n
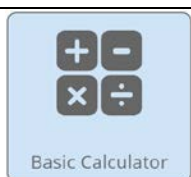
Lock Down Features

Severe (0s)	• The **force full screen** will force the exam to be taken in full-screen mode.
	• When paired with **Only One Screen**, Proctorio ensuring that students do not use outside resources on their computer during their exam.
	• The student will not be able to minimize the exam or navigate away from the exam page (that is, they cannot use other programs) or the exam will be immediately submitted. The length of time before a student is removed from an exam can be adjusted to suit different test requirements:
	  • **lenient** (30 seconds)—allows students to be out of full-screen mode for 30 seconds before being kicked out of the exam
	  • **moderate** (15 seconds)—allows students to be out of full-screen mode for 15 seconds before being kicked out of the exam
	  • **severe (***recommended,*** immediate)**—kicks students out of the exam immediately upon exiting full-screen mode.

1 **Only One Screen**	• Prevents the student from having multiple monitors. • Proctorio will detect the presence of an extra monitor and require the student to disconnect it prior to starting the exam. • When paired with **Force Fullscreen**, Proctorio ensures that test takers do not use outside resources on their computer during their exam.
Close Open Tabs	• Closes all other open tabs at the start of the exam. • If the student has additional tabs open, they will be prompted to close the tabs or use the **Bookmark My Tabs** extension to save their current tabs before they are automatically closed. • When paired with **Disable New Tabs**, the student cannot visit other websites.

No New Tabs	• Disables the opening of new tabs during the exam.
	• Prevents the student from creating new tabs or opening new windows.
	• *NOTE:* This does not mean that the student will not have access to other web content. If the student has tabs open before the exam begins, they will be able to look at these tabs. When paired with **Close Open Tabs**, the student is unable to access websites during the exam.
	• There are three settings for **Disable New Tabs**:
	  • **Tabs Allowed**: Students are permitted to open additional tabs within the Chrome browser. This setting essentially turns off the function of this tool.
	  • **Disable New Tabs**: Students cannot open additional tabs within the Chrome browser.
	  • **In-Quiz Links Only**: Students are permitted to access links provided by the instructor within the quiz.

Disable Printing	• Prevents the student from printing the exam via keyboard shortcut or by right-clicking and printing. • When paired with **Disable Right Click** and **Disable Clipboard**, your exam is secure and cannot be shared with other students. • **Note**: This exam setting is incompatible with **ReadSpeaker**, which reads user-highlighted text aloud.

Disable Clipboard	• Blocks the student from using copy, cut and paste. • This is a preventive measure to ensure that students do not share exam questions or paste answers from outside sources. • When paired with **Disable Right Click** and **Disable Printing,** your exam is secure and cannot be shared with others.
Block Downloads	• Prevents students from downloading anything during the exam, including the exam itself and any files from websites or external sources. • If the student attempts to download anything, Proctorio will prevent the download from occurring *and* provide a warning to the student that the exam attempt has been suspended. • When the exam attempt is over, the Proctorio gradebook will flag the exam attempt for a suspicious ending, and Proctorio will alert the instructor that the exam attempt ended when the student attempted a download.
Disable Right Click	• Prevents the student from right-clicking within the exam window. • Protects against accessing the print menu, page source, and developer tools via the mouse.

Use-with-Caution Features

Record Video	• Requires the student to have and configure a webcam for the exam. • Will record the student via webcam during the entire exam. The exam footage will be available to the professor after the exam has been completed and can be viewed through the Proctorio exam video player. • To verify that a student has a proper webcam before the exam starts, enable the **Verify Video** option within the **Additional Exam Settings**. • Advise students well in advance of any exam using this feature to ensure that they have and can set up a webcam. • To address invasive privacy issues, advise students to remove any personal or identifying object from the camera view and to ensure privacy of the exam space.

Record Audio	• Will record the sound of the surroundings via microphone during the exam, including
	   • student talking to others
	   • others talking to the student
	   • changes in ambient noise
	• To verify that the student has proper microphone levels before the exam starts, enable the **Verify Audio** option within the **Additional Exam Settings**.
	• Audio can be the most complicated hardware to configure on a computer, especially in cases where the user has multiple USB devices or more than one microphone. Students would be responsible for troubleshooting their own computer settings well in advance of the exam.

Audio Levels	*This is an Environmental Abnormality tracker (see above).*
	
	 • Requires student to have and configure a webcam for the exam.
	 • Alerts the instructor when the noise in the room has increased or decreased significantly compared to that of the other students.
	 • **When to enable**: distance exams
	 • **When not to enable**: simultaneous in-person exams
	 • **Flagging**:
	    o **Abnormally high**: A student has an abnormally high amount of audio activity if there are noises that are not considered to be ambient white noise. This could occur if the student is relaying questions to another person or if they are receiving answers from another person.
	    o **Abnormally low**: In a group exam, a low amount of audio activity may show that the students are not collaborating to take the exam and may indicate that a single student has performed most of the work.
	 • How to review: Use the **video player** to listen to the audio recordings. Proctorio automatically filters out white noise and breathing, which will leave just incidents where audio levels have increased. Use the Proctorio **incident log** to find specific locations where an increase in audio levels has occurred. This will allow the instructor to determine what audio is coming across and if it is related to the exam or just an external noise.

Auto ID Check	• Requires student to have and configure a webcam for the exam.
	 • Auto ID Check requires the student to hold up their (BCIT) ID card to the camera during the exam pre-checks so that it can be photographed.
	 • Proctorio uses machine learning to scan and automatically detect ID cards, then automatically captures the image and displays it in the Proctorio Gradebook for instructor review after the exam.
	 • Proctorio automatically highlights ID cards that are suspicious, include IDs that are blurry, damaged, or of an unrecognized format. These IDs will be shown with a red ID icon.
	 • There are two ways to verify test taker's IDs:
	    • **Automatic ID Check**⸺requires test takers to hold their ID cards up to the webcam, and an image is displayed in the Proctorio Gradebook. The form of ID is evaluated by software and flagged for irregularities
	    • **Live ID Check (do not use)**⸺requires test takers to hold up their ID cards to the webcam to be verified by a Proctorio customer support agent in real-time.

Verify Desktop	• Creates an additional check during the system diagnostic test to ensure that the student's screen recording is functioning properly (**Record Screen**). • Without this option enabled, you may only see the mouse cursor moving over an all-black or solid-coloured screen in the Proctorio Gradebook. The screen-share may be working but is not showing the full contents of the screen (browser, external applications, desktop). This is similar to the **Verify Video** option, where the student may have a working webcam but has covered it up. • This is usually a system limitation due to the student's display settings that can be fixed in most cases, but this would require the student to be able to troubleshoot their computer settings.

Not Recommended Features

	Record Room Features

Scan at Start
 	
Intelligent Scan
	This feature is complex, invasive and misleading in the degree of security it offers.
	
	• Requires student to have and configure a webcam for the exam.
	• Requires the student to show, via video, their test environment during an exam.
	• Requires student to slowly scan the room and work area with their webcam or laptop. The student will be asked to do this randomly throughout the exam or after surpassing a certain level of suspicious behaviour.
	• **Record Room** lasts 15 seconds. This time counts against exam time. Because of this, add additional time to these exams.
	• Instructors must specify how to perform **Record Room** in the quiz instructions based on what the instructor wants to see.
	• General instructions to students on how to perform a room scan:
	  ○ You may be randomly asked to perform a room scan during your exam.
	  ○ You will require a webcam to perform this task.
	  ○ If this happens, lift your external webcam or laptop and slowly turn it around to give a 360-degree view of your exam environment. Do not move the camera too fast or it won't provide a clear video. Show each corner of the room and your desktop area.
	  ○ Once you are finished, return your webcam or laptop as close to its original position as you can.
	  ○ If you're using a desktop computer with a built-in webcam, it might be difficult to lift and rotate the entire computer. You can perform the room scan by showing the surface behind you to the camera first and then rotate a larger mirror in front of the webcam so that the surfaces on the left and right side of your monitor are clearly visible. The room scan you are performing is visible on your screen so you can monitor the process and make sure all areas of the room are scanned.
	  ○ Always get clarification from your instructor if you are unsure about your room scan.
	  ○ Failure to perform the room scan properly may result in a violation of exam procedures.
	• A panorama of the room scan will be added to the Proctorio Gradebook.
	• Instructors may review the student's room scans by selecting the **Room Scan** button.
	• For high-stakes exams, this feature allows an instructor to see if the test taker is using any unauthorized materials, or if there are other computers or people in the room.
	• There are two settings for **Record Room**:
	  • **Intelligent Scan**: Students are asked to perform a **Record Room** scan at the beginning of the exam and at key intervals during the assessment (depending on the length of the exam). This setting also responds to student activity, depending on other settings selected and level of suspicion for each student. Suspicious behaviour will trigger additional room scans.
	  • **Scan at Start**: This setting asks the student to perform the **Record Room** scan once, at the beginning of the assessment. This will occur a few minutes into the exam in order to fully capture the test environment. **Scan at Start** room scans will be performed within the allotted exam time, so factor that time into the amount of time permitted.

Verify Video	• Creates an additional pre-exam check for the student. This check ensures that the student's webcam is properly working by ensuring that a face can be recognized in the video feed. Proctorio runs facial recognition on five photos taken during the system check. • This step eliminates false positives that could be generated if the student was not properly framed in the webcam feed or was in a room with bad lighting. False positives create a high suspicion rate. By enabling this option, the test taker has the chance to correct these issues before entering the exam.
Verify Audio	• Creates an additional pre-exam check for the student. This check will generate an audio sample of the white noise of the room as well as the student's talking level. • This step eliminates false positives that could be generated if there were a fluctuation in white noise in the student's surroundings. False positives create high suspicion in the Proctorio Gradebook. Enabling this option gives the test taker the chance to find a quieter location before starting the exam. • Audio can be the most complicated hardware to configure, especially in cases where the user has multiple USB devices or more than one microphone. Students are responsible for troubleshooting their own computer settings.

Do Not Use Features

Re-entry with Agent	Do not use this feature. • The **Quiz** tool in the learning hub tracks logins, so student activity is available to the instructor. • This Proctorio feature involves giving Proctorio's helpdesk agents the authority to make decisions regarding allowing your student re-entry into their exam. • Use other Learning Hub or Proctorio combinations of settings to track student activity if re-entry is a concern.

Verify Signature	Do not use this feature.
	
	• This feature actively confirms a student's commitment to academic integrity prior to an exam.
	• If you wish to document this for your students, you have two better options in the Learning Hub:
	
	1) Create a single-question quiz (Yes/No) in your Learning Hub course that validates they have read, understood and will abide by BCIT policies.
	    o Then use the Learning Hub's **Release Conditions** to lock out students who answer "no" until they have spoken to you.
	2) Put links to policy in the quiz instructions with a statement such as the following:
	    "By starting this exam, I confirm that I have read, understand and will abide by BCIT policies as they pertain to academic integrity."

Start Times

Exam Duration

End Times

Do not use these features. Instead, follow the suggestions below.

- Use the quiz settings in the Learning Hub to control exam access start and end times as well as exam duration.

Control Exam Timing through the Learning Hub Quiz Settings

In the Learning Hub quiz tool, you have access to the following comparable settings:

Start Date (and time)
- The moment at which the exam becomes available for students.

End Date (and time)
- The moment at which the exam can no longer be accessed.
- Should a student's internet connection fail for a period before the end time, they will be able to log back into the exam and resume.
- Should a student's internet connection fail after this time, they will not be able to log back in.
- The system will log and show the time of the multiple entries.

Time Limit + Grace Period
- The total length of time the students have to complete their exam.
- If a student logged in during the last half hour for their two-hour exam, they would be able to continue, but would not be able to log back in again after the end time + grace period passes.
- This applies to any login, including students who may have been bumped due to a flicker in their internet connection.

Exceeded Time Limit Behaviour

Allow the student to continue working
- The student will be able to continue with their exam, but their late answers will be flagged, enabling the instructor to decide if they should be included for the exam mark or not.

Prevent the student from making further changes
- Once the time limit + grace period have passed, the student will not be able to save more questions or submit the exam. The exam will remain "in progress" as a flag for the instructor, who can submit the exam for the student.

Allow the student to continue working, but automatically score the attempt as zero after an extended deadline.

Saved Profiles

Profiles allow you to save your preferred Proctorio exam and behaviour settings across all of your courses. You will have to be logged into Chrome with the extension enabled to use and create profiles. This way, you can quickly set exam settings for everything from open-book quizzes to high-stakes final exams. This will produce consistently measured suspicion levels for similar types of assessments. You may also preset your preferred behaviour settings for gradebook review or to adjust the behaviour settings from within the gradebook later. This eliminates worry

about documenting your favourite settings to ensure that your exams and quizzes are uniform in all of your courses.

Proctorio Behaviour Settings

Behaviour settings set the suspicion level of each recorded action during the exam.

Behaviour settings should reflect the type of exam that is being given (for example, not using lockdown features and allowing head and eye movement on an open-book test).

The behaviour settings do not turn on or off the collection of data. This is done through the options listed in the tables above. Instead, they set the weight of the behaviour flags (see below).

You can change your behaviour settings at any time and the **suspicion levels** (see below) will be recalculated instantly. This allows you to dial in the settings after an exam to only see suspicious students in your areas of interest.

For ease of use, Proctorio provides pre-set configurations based on input from other users and analysis of common configurations. These presets are shown as tiles, which are an easy one-click step to change the security level of an exam. Through the custom tile, you can set each behaviour and abnormality setting to meet your needs.

For example:

	• This is the lowest setting for Proctorio Behaviour Settings. It is the preferred setting for low stakes quizzes. By enabling this setting, multiple suspicious events in the same frame will be required to trigger a higher level of suspicion.
	• It flags the following (weight):
	  o Flag New Windows or Tabs: (1)
	  o Flag Copy and Paste: (1)
	  o Flag Browser Resize: (1)
	  o Flag Changes in Audio Levels: (1)
	  o Flag Head Movements: (1)
	  o Flag Eye Movements: (1)
	  o Flag Multiple Faces: (1)
	• It also reports the following abnormal behaviours:
	  o Abnormal amount of time taken to complete the exam
	  o Discrepancy between server and client start times
	  o Discrepancy between server and client start and end times
	  o Another user has taken the exam in a similar time with the same IP

Moderate
 	
Some behavior violations will trigger high suspicion levels.
	• This is the middle setting of the Proctorio Behaviour Settings. It is the preferred setting for exams that carry more weight than a quiz, but less weight than a final exam. By enabling this behaviour setting, some suspicious events will trigger higher level of suspicion, while others will require multiple activities within the same frame to trigger a high level of suspicion.
	• It flags the following (weight):
	    ○ Flag New Windows or Tabs: (3)
	    ○ Flag Copy and Paste: (5)
	    ○ Flag Browser Resize: (3)
	    ○ Flag Changes in Audio Levels: (3)
	    ○ Flag Head Movements: (3)
	    ○ Flag Eye Movements: (3)
	    ○ Flag Multiple Faces: (5)
	• It also reports the following abnormal behaviours:
	    ○ Abnormal amounts of navigation away from the page
	    ○ Abnormal copies and pastes
	    ○ Abnormal movement of the head
	    ○ Abnormal movement of the eyes
	    ○ Abnormal number of faces detected
	    ○ Abnormal amount of time taken to complete the exam
	    ○ Discrepancy between server and client start times
	    ○ Discrepancy between server and client start and end times
	    ○ Another user has taken the exam in a similar time with the same IP

Frame Metrics

Sets the weight a suspicious behaviour carries in relation to other behaviours. These settings enable the instructor to adjust the weighing of each of the listed features. For example:

Navigating Away   Keystrokes   Copy & Paste

Suspicion Levels

Proctorio is intended to be used to uphold academic integrity by discouraging cheating. However, some incidents will still occur. When these do happen, Proctorio makes the identification of these cases as simple as possible. One way is through the suspicion level. The suspicion level is a percentage that represents low, medium, or high suspicion for an individual's exam attempt.

The suspicion level is a quick calculation based on the aggregation of frames (captured activity) during the exam that were deemed suspicious and the detection of abnormal (deviation from the class norm) behaviour. If the suspicion level shows a large percentage, then this is an exam attempt that should be considered for further review.

The suspicion level will increase or decrease depending on how heavily each **Behaviour Setting** is weighted and which abnormaliti**e**s are enabled.

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Exam Security with Proctorio

What is Proctorio?

Proctorio is a secure monitoring platform that integrates with Canvas and **ONLY** works within the Chrome web browser. This automated system lets instructors decide which settings to use for each exam with the click of a mouse.

Proctorio offers customizable recording and lock down options in addition to security tools that prevent unauthorized web surfing and/or content capture. All internet browsing can be blocked or specific links within the exam can be whitelisted. Proctorio prevents test distribution by restricting the ability to copy and paste, print, and/or save as PDF, while automatically clearing caches and disabling extensions during the assessment to keep exam content secure.

*Don't need all these bells and whistles? Proctorio offers a simple lock-down browser option. For more information, please visit **[Proctorio Lock-down Browser Tool](https://utexas.instructure.com/courses/633028/pages/proctorio-lock-down-browser-tool)***

Instructors and students must have the following installed on their device (one-time task):

- Chrome browser: **[System requirements](https://support.google.com/chrome/answer/95346?hl=en&ref_topic=3227046)** (Windows, Mac, Linux)
- Proctorio browser extension (**[download](https://chrome.google.com/webstore/detail/proctorio/fpmapakogndmenjcfoajifaaonnkpkei)**)
  - YES - **laptops and desktops**
  - NO - Android/iOS smartphones or tablets

*Proctorio has been added to all Canvas courses, disabled by default. To use Proctorio, go to **Settings** > **Navigation** tab > click the three dots to **Enable** [1]> click **Save** [2].*
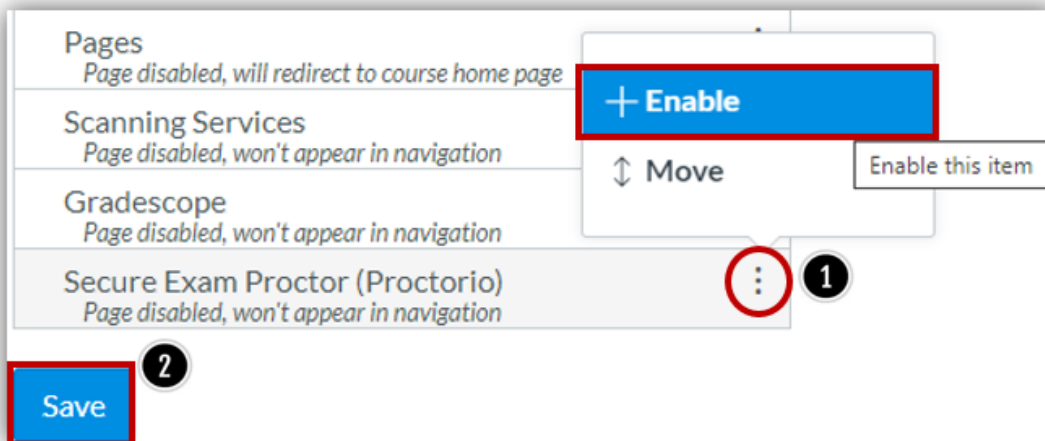
Resources

Add to Quiz   **Exam Settings**   Proctorio Gradebook   **Best Practices**

Student Communication

Reviewing Proctorio Results

- **There is no Proctorio outcome that unequivocally indicates academic misconduct.**
- **All suspicious results must be carefully and thoroughly reviewed** before escalating to Student Conduct to determine whether a potential violation has occurred or the results are due to false flags.
- If you are concerned about student conduct online and need guidance on how to evaluate or address the behavior, please **email Student Conduct and Academic Integrity (mailto:studentconduct@austin.utexas.edu)** or visit the **Student Conduct and Academic Integrity website (https://deanofstudents.utexas.edu/conduct/facultysupportonlineintegrity.php)** for more information.

Accessing the Proctorio Gradebook

Accessing the Proctorio Gradebook Can...

The Proctorio Gradebook will host all of the test takers attempts for an individual exam. You may access the gradebook by navigating to the quiz and selecting "View Proctorio Gradebook" beneath the Speed Grader button.

Once the Proctorio Gradebook is loaded all of the test takers attempts will be displayed, sorted by suspicion level.

- **Behavior Settings** [(https://proctorio.zendesk.com/hc/en-us/articles/200757294-Behavior-Settings)](https://proctorio.zendesk.com/hc/en-us/articles/200757294-Behavior-Settings)
- **Behavior Flags** [(https://proctorio.zendesk.com/hc/en-us/articles/200861640-Behavior-Flags)](https://proctorio.zendesk.com/hc/en-us/articles/200861640-Behavior-Flags)
- **Proctorio Abnormal Metrics** [(https://proctorio.zendesk.com/hc/en-us/articles/200273669-Proctorio-Abnormal-Metrics)](https://proctorio.zendesk.com/hc/en-us/articles/200273669-Proctorio-Abnormal-Metrics)
- **Proctorio Exam Video Player Overview** [(https://proctorio.zendesk.com/hc/en-us/articles/201832464-Proctorio-Exam-Video-Player-Overview)](https://proctorio.zendesk.com/hc/en-us/articles/201832464-Proctorio-Exam-Video-Player-Overview)

Proctorio Gradebook Overview

Proctorio Grade book

The Proctorio gradebook displays high level information about each remotely proctored exam to provide a quick visual indication of what should be investigated further.

This is done primarily through the behavior preview, a small timeline that shows suspicion levels throughout an exam attempt as red, yellow or green.

If a professor wants more detail on a particular attempt, clicking on that row in the gradebook allows for the professor to view the Exam Video Player. This is a custom built video player that enables professors to quickly analyze video for suspicious activity. Proctorio provides a number of tools to help professors quickly make informed decisions about their students' activities. You can quickly navigate around the entirety of the exam by using the Exam Timeline. This timeline shows the entire exam along the bottom of the video player. The exam is broken into chunks, and suspicion is calculated to generate the colors along the bottom.

Proctorio accesses the Canvas gradebook to retrieve student names, profile pictures, and the score for the exam.

Proctorio Gradebook columns

Like any other gradebook, the Proctorio gradebook contains the information that was collected during the exam. Proctorio references information from Canvas as well as its behavior information to create a comprehensive exam review system. Each column can be sorted for quick access to the information you need. The last column contains a box which is labeled by color based on the level of suspicion assigned to the exam attempt. Proctorio uses a stoplight color scheme to show suspicion levels. Red indicates a high level of suspicion. Yellow indicates some suspicion, and green indicates little suspicion.

Proctorio Suspicion Level

The suspicion level is a percentage that represents low, medium, or high suspicion for an exam and will increase or decrease depending on how heavily each Behavior Setting is weighted and which Abnormalities are enabled.

The suspicion level is a quick calculation based on the aggregation of frames during the exam which were deemed suspicious and the detection of abnormal behavior. If the suspicion level shows a large percentage, then this is an exam that should be considered for further review.

Proctorio Behavior Preview

The behavior preview is a color coded block that represents low, medium, or high suspicion for an exam. A green block will represent an attempt that had a low suspicion rating. Yellow blocks represent a mid level suspicion rating and red identifies suspicious exams which should be reviewed.

Tab Navigation

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UMSL Proctorio Faculty Guide

Proctorio is an advanced solution for online test security and remote, automated test proctoring. It is integrated into Canvas so there is no software to install. This introductory guide was adapted from the UM System Teaching Tools Proctorio website and tailored to UMSL by the Center for Teaching and Learning.

Table of Contents:

This is Exhibit BK referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

_____

A Commissioner for taking Affidavits for
British Columbia

Step 1: Enable Proctorio in Canvas

You must use **Chrome** for your web browser when working with Proctorio. If you do not have Chrome installed, <u>download it here</u>.

First, add the Proctorio tool to your Canvas Course Navigation:

1) In your course, navigate to **Settings** and click on the **Navigation** tab (*see Figure 1*).

| Course Details | Sections | Navigation |

Figure 1, *Navigation menu in course Settings*

2) Drag **Secure Exam Proctor** from the bottom section to the top section, placing it where you wish to occur in the menu (*see Figure 2*).

Secure Exam Proctor
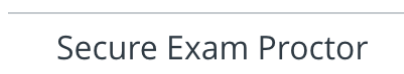
Figure 2, *Secure Exam Proctor link*

3) Click the **Save** button at the bottom of the screen (*see Figure 3*).

Save

Figure 3, *Save button*

Step 2: Install Proctorio Chrome Extension

Click the **Secure Exam Proctor** link in **Course Navigation**:

1) A new page will open. Click to **Install Proctor Chrome Extension** (*see Figure 4*).

Proctorio *Chrome Extension*

This course requires you to install an extension into your browser.

1 Install Google Chrome.
done.

Figure 4, *Installing the extension*

2) On the next page, click the **click here** link under **Install Proctorio Chrome Extension** (*see Figure 5*).

2 Install Proctorio Chrome Extension.
click here

Figure 5, *click here to install*

3) That will take you to the Chrome Web Store. Click the **Add to Chrome** button near the upper-right hand corner of the window (*see Figure 6).*

Add to Chrome

Figure 6, *Add to Chrome button*

4) Wait for it to download. Then, return to the Canvas Secure Exam Proctor tab and refresh the browser page to view the confirmation message that it has been successfully installed (*see Figure 7*).

Secure Exam Proctor Plugin Successfully Installed! Please return to your course.

Figure 7, *confirmation message*

5) Create a Profile to allow easy reuse of these settings (optional).

6) Save or Save and Publish the Quiz.

Step 3: Set Up Your Quiz

Create your Quiz the usual way. Required settings:

1) Proctorio Chrome Extension must be installed.

2) **Quiz must have a time limit set**. This must be less than 8 hours.

   Please note: If the exam lives in non-Canvas courseware, be sure that the availability and time limits in the Canvas quiz match those in the courseware exam itself. Remember, if you make these changes in one system, you need to make them in the other.

3) Be sure to choose **Classic Quizzes**. Proctorio is not yet compatible with the **New Quizzes** tool.

4) In **Edit** mode, scroll down to **Quiz Restrictions** and click **Enable Proctorio Secure Exam Proctor** (_see Figure 8_).

☐ Enable Proctorio Secure Exam Proctor
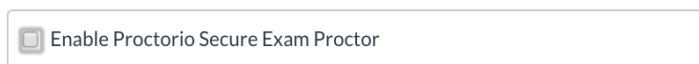
Figure 8,enable Proctorio for your Quiz

5) In **Edit** mode, click the **Proctorio Settings** tab that will appear to the right of Details and Questions (_see Figure 9_). Please note that it may take a moment for the tab to appear.

Details   Questions   Proctorio Settings

Figure 9, the Proctorio Settings tab

Using Proctorio with non-Canvas Courseware

At this time, Proctorio is set up to support Canvas quizzing only. If your exam is delivered on a site outside of Canvas, these instructions present how to do the work-around. In order to use Proctorio with non-Canvas courseware (MyMathLab, Cengage, McGrawHill, etc.), **you will need to set up a Canvas Quiz to start Proctorio AND an exam in your preferred courseware**. Please note that this will create two columns in your gradebook, but only one will be used for grading. Also, some of the features of Proctorio **will have to be disabled**; you will still be able to review your students' screen recordings, web traffic, and behavior during the exam session (*see Step 5: Reviewing Sessions in the Proctorio Gradebook*).

1) Before creating the Quiz to start Proctorio in Canvas, please create the test in your courseware and deploy it to Canvas. Depending on the capabilities of the courseware, we recommend:
   - Setting a password for the exam.
   - Setting a time limit and availability dates that will **match those in Canvas**.
   - Randomizing questions.

2) Create a Canvas quiz as directed above but ensure that you do the creation and any later editing in **Chrome** with the **Proctorio Extension** installed.

3) In Edit mode, **do not click the box enabling students to see correct answers** – there will not be any in the Canvas placeholder quiz anyway, but this will keep the link from appearing to students after the test (*See Figure 10*).

> ☐ Let Students See Their Quiz Responses (Incorrect Questions Will Be Marked in Student Feedback)

Figure 10, do not enable students to see responses

4) Be sure to include **detailed instructions** outlining each step of the process.

5) Create at least one question. We recommend that this be **Text (no question)**.
   a) Add directions instructing students to click the link, wait for the courseware test to open in a new tab, etc.
   b) Add the link by choosing it from the **Assignments** tab.
   c) Add the password.
   d) Save the question.
   e) Example: *See Figure 11*.
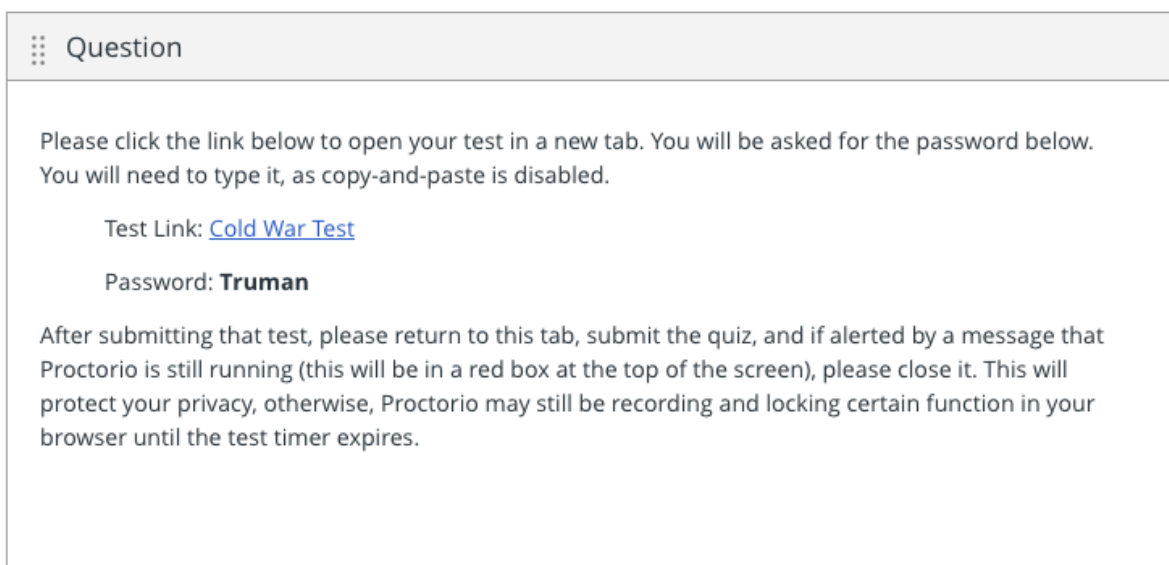
Figure 11, *example of Text directions for how to access the courseware*

Tips for Using Proctorio with non-Canvas Courseware:

- There will be variations in this process between publishers. **Each publisher has different features** in their courseware and integrates differently with Canvas.
- One suggestion for getting students to return to the Canvas Remotely Proctored Quiz to "submit the quiz" and end the Proctorio session, is to have a **bonus question** in the Canvas placeholder quiz. You may wish to set up Canvas to show one question at a time; however it would not be a good idea to set the quiz to prevent backtracking, as that could lock a curious student out of the link to the courseware exams.
- When reviewing the recorded exam sessions in Proctorio, you may decide that there are too many **false positives suggesting that students may have cheated**. Remember that you can change the Behavior and Anomaly Detection settings (*see Step 4: Proctorio Exam Settings*). Those that detect **Navigating Away** from the quiz will generate false positives because students must do that to access the courseware exam!
- **An alternative to this process** would be to check with your publisher representative to see if test banks are available to import the questions into Canvas rather than to send students to the Publisher's website to complete the exam. Hosting the exam directly in Canvas would allow full utilization of Proctorio's Lock Down settings.
- Please contact elearning@umsystem.edu if you have further questions. However, you may consider contacting your publisher representative to determine if there are other features that may be of use. Because of the number and complexity of courseware systems integrated with our Canvas environment, it is not possible for the Office of eLearning to offer comprehensive support for all of their features and functionality.

Step 4: Proctorio Exam Settings

The three major sections of the Settings tab are Exam Settings, Behavior Settings, and Exam Metrics.

1) Exam Settings (*Figure 12*): Exam settings encompasses Recording Options, Lock Down Options, Verification Options, and In-Quiz tools. These will set the requirements for your students when taking the test. **Please note that all of these settings, including video recording, are optional.**

▼ Proctorio Exam Settings

Exam settings can not be changed once the first test taker has started the exam.

▶ Recording Options

▶ Lock Down Options

▶ Verification Options

▶ In-Quiz Tools

▶ Exam Settings Summary

Figure 12, *Proctorio Exam Settings menu*

Recommended Proctorio Exam Settings (*see Figure 13)*

- Record Video = On
- Record Audio = On
- Record Screen = On
- Record Web Traffic = On
- Scan at Start = On
- Force Full Screen
    - Normal Canvas Quiz = On
    - Non-Canvas courseware exam or exam with on-screen resource(s) = **Off. If this option is enabled, students will not be able to access the test in non-Canvas courseware and/or access supplemental resources (e.g., e-book) in side-by-side tabs.**
- Only One Screen = On
- Disable New Tabs
    - Normal Canvas Quiz = On
    - Non-Canvas courseware exam or exam with on-screen resource(s) = **Off. If this option is enabled, students will not be able to access the test in non-Canvas courseware and/or access supplemental resources (e.g., e-book) in additional tabs.**

- Close Open Tabs = On
- Disable Printing = On
- Disable Clipboard = On (unless students need to be able to copy and paste to complete the exam)
- Block Downloads = On
- Clear Cache = On
- Disable Right Click = **On (unless students need to be able to copy and paste to complete the test)**
- Prevent Re-entry = **Off (this feature is problematic if internet connections are unreliable)**
- Verify Video = On
- Verify Audio = On
- Verify Desktop = On
- Auto ID Check = On if desired
- Verify Signature = **Off (this feature is problematic on computers that do not employ a stylus)**
- Calculator = As desired
- Whiteboard = As desired

▼ Proctorio Exam Settings
Exam settings can not be changed once the first test

Even though we cannot lock down the browser for tests with courseware, these two settings will ensure that any visits to other web pages will be captured.

▼ Recording Options

| Record Video | Record Audio | Record Screen | Record Web Traffic | Scan at Start |

These options determine what information will be recorded during the exam.

For tests with courseware do not use Intelligent Scan. Students in the courseware tab may miss the request for a scan. Only use Scan at Start.

These must be off for an exam in courseware

▼ Lock Down Options

| Force Full Screen | Only One Screen | Disable New Tabs | Close Open Tabs | Disable Printing | Disable Clipboard |

| Block Downloads | Clear Cache | Disable Right Click | Prevent Re-entry |

These options determine what will be restricted during the exam.

If students need to use external tools, such as an IPA keyboard, you will need to disable these settings

▼ Verification Options

| Verify Video | Verify Audio | Verify Desktop | Auto ID Check | Verify Signature |

Verify Video will ensure the webcam is working, pointed in the right direction, and their face is clearly visible.

▼ In-Quiz Tools

| Calculator | Whiteboard |

This option allows test takers to use a scratch pad on-screen

*Figure 13, recommended Proctorio Exam Settings. Please note that if you enable **Force Full Screen** or **Disable New Tabs**, Proctorio will block students from accessing non-Canvas courseware and/or supplemental digital resources (such as an e-book) in additional tabs.*

2) **Behavior Settings:** Behavior settings are a set of pre-made profiles that determines how different metrics are weighed to determine suspicious behavior during the test session. The security levels are: Recommended, Lenient, Moderate, Group Exam, Open Note, and Custom.

Proctorio Frame Metrics: These behavior settings can be adjusted by sliders (*See Figure 14*).

These behavior settings allow you to set the weight of suspicious behaviors using preset configurations.

▼ Proctorio Frame Metrics

The severity of each metric sets the weight of a suspicious behavior in relation to the other behaviors. These metrics are calculated with each image. Each characteristic is derived for every image, regardless if the setting is enabled or not. The severity of these metrics can be changed at any time which will result in a re-calculation of the suspiciousness of a Proctorio proctored exam.

Navigating Away

Keystrokes

Copy & Paste

Browser Resize
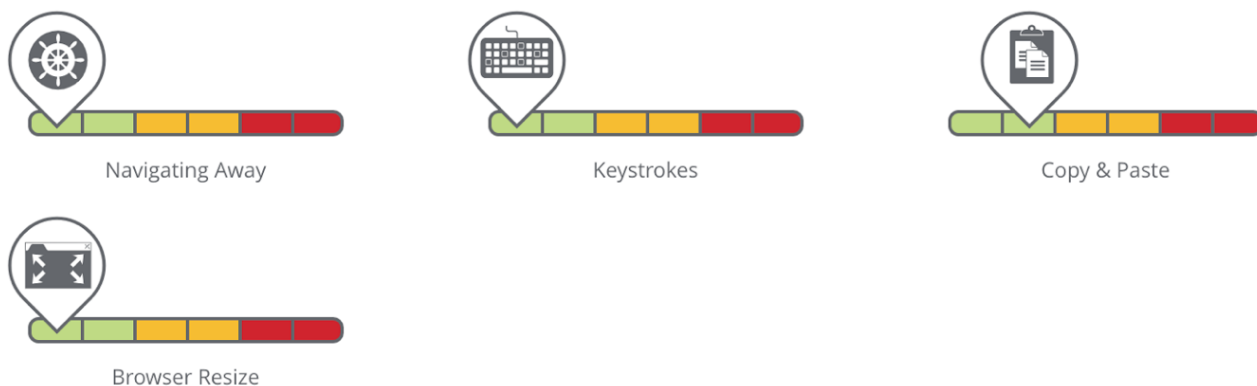
Figure 14, *optional Proctorio Frame Metrics*

Proctorio Exam Metrics**:** These settings allow you to decide what kinds of abnormalities to highlight when evaluating a student's behavior during the test. They are grouped into Computer Based Abnormalities, Environmental Abnormalities, and Technical Abnormalities (*see Figure 15*).

▼ Proctorio Exam Metrics

Abnormalities compare one test taker's actions to the rest of the exams in the class. This will highlight statistically significant differences in a test taker's behavior.

Computer Based Abnormalities

Navigating Away	Keystrokes	Copy & Paste	Browser Resize	Mouse Movement
Scrolling	Clicking			

Abnormal clicking will highlight test takers who interacted with the quiz page less than the rest of the class

Environmental Abnormalities

Environmental abnormalities track changes in the test taker's testing environment

Technical Abnormalities

Exam Duration	Start Times	End Times
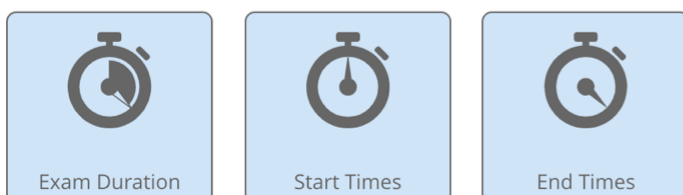
Start Times will highlight test takers whose LMS start time does not match the Proctorio start time

Figure 15, Proctorio Exam Metrics

In-Quiz Tools: This option allows students to use an on-screen basic or scientific calculator and/or basic notepad with text annotation and drawing features.

Step 5: Reviewing Sessions in the Proctorio Gradebook

The Proctorio Gradebook provides a visual overview of the behaviors and anomalies noted by Proctorio's algorithms for all test takers, initially sorted by **Suspicion Level**. Depending on the Proctorio Exam Settings you have enabled, here you can review many aspects of individual test taker sessions, including:

- Video and audio recording of test session
- Panorama of test environment
- Screen recordings of computer activity during the test
- Test's geographic location
- Statistics on computer and network performance

The first time you access the Proctorio Gradebook, you will be shown an overview video explaining all of the features in detail.

To access Proctorio Gradebook, go to your Canvas course site, click on the desired quiz and then click the **View Proctorio Gradebook** link on the right (*see Figure 16*).

Related Items

📊 **Quiz Statistics**

⚙ **Moderate This Quiz**

☑ **SpeedGrader™**

⊙ **View Proctorio Gradebook**

Figure 16, View Proctorio Gradebook

Suspicion Level ratings are displayed with **green**, **yellow**, and **red flags**, with green representing the lowest (best) ratings, yellow for moderate ratings, and red for the highest (worst) ratings (*see Figure 17*).

Name	Submission Time	Attempt	Score	Annotations	Abnormalities	↓ Suspicion Level	
Student, Test	05/11/2020 01:29:49 pm	3	1	0	3	62%	🔴
Student, Test	05/11/2020 01:23:27 pm	1	1	0	3	22%	🟢
Student, Test	05/11/2020 01:27:13 pm	2	1	0	0	7%	🟢

Figure 17, list of test taker sessions and Suspicion Levels

Clicking on an individual test taker's session will take you to the applicable timestamps in the test recording (*see Figure 18*).
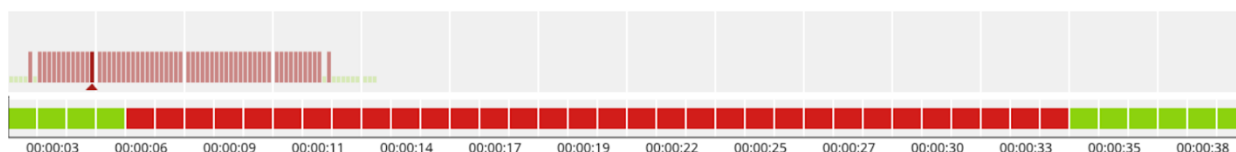
Figure 18, *timeline of a test taker's session and flags*

Please note there must be more than 3 test sessions before Proctorio will begin calculating Abnormalities.

Note on Proctorio and Accessibility

Students who rely on keyboard navigation will not be able to use Proctorio. Some features of Proctorio will also not work with some screen readers. The Signature, ID Card, and Room Scan options should not be used if you need Proctorio for students with vision impairments. They will also encounter issues with Face Verification.

To allow students to bypass using Proctorio:

1) Go to the quiz or test in your course.

2) Click Moderate Quiz (remember, it may take a moment for Proctorio Settings to appear).

3) Uncheck the box for any students you wish to exempt from Proctorio in the column at the right of the page (*see Figure 19*).
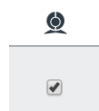
Figure 19, *disable Proctorio for a test taker*

Syllabus Statement

Please adapt the following verbiage for your syllabus. **Please note that the statement in bold must be included in your syllabus in order for you to use Proctorio:**

Some assessments (such as tests and/or quizzes) in this course require the use of Proctorio Learning Integrity Platform. Proctorio is an online, remote proctoring system that uses advanced machine learning and identity-verification technology to ensure test integrity.

Taking assessments with Proctorio requires the use of the Google Chrome Browser; you cannot use any other browser. You must have a laptop or desktop computer with a webcam and a microphone; you cannot use a smartphone or tablet. You must have a stable internet connection to take the assessment. Please review the Taking Proctorio Tests website to ensure that your hardware and software meet the minimum requirements. **UMSL recognizes that not all students may be able to meet the minimum requirements. If you do not have access to the minimum technology requirements or have disabilities that require the use of a screen reader or keyboard navigation shortcuts, please inform your instructor before the quiz or test so that accommodations may be made**.

You will have an opportunity to take a practice assessment with Proctorio before you take a graded assessment. If no Proctorio practice assessment is included in this course, please check your campus' Online Student Orientation Course for one (some of the settings in the practice assessment may differ from the actual ones in your course). You should do this ahead of your first real assessment with Proctorio, as required adjustments may take a few minutes and take valuable assessment time.

Please be aware that:
- You, your computer, and physical test taking environment may be recorded.
- As you may be recorded, please dress appropriately and choose a private location that you are comfortable being the backdrop in a recording.
- You may be asked to show a picture ID to the camera.
- You will need a quiet place to take the assessment - both for your concentration and as interruptions (voices, another person on camera, etc.) may be flagged for potential cheating.

If you have concerns about your privacy or data security, please see Proctorio's statement on Personal Data Protections.

See the Taking Proctorio Tests page in the Keep Learning website to learn how to:

- install the Proctorio extension for Chrome;
- set up your assessment environment; and
- complete the pre-assessment checks.

Tips

- Please note that students are not able to take the Proctorio version of the test in a physical testing facility. The Testing Center does not have webcams and microphones, and therefore cannot run Proctorio in the testing labs.
- Proctorio will automatically generate and manage the test's access code for the Remotely Proctored version of the test. You must submit the required information to the Testing Center separately if you would like to offer an in-person proctoring option for your students.
- Remember that it may take a moment for the Proctorio Settings and Proctorio Gradebook tabs to appear in Edit and Moderate this Quiz. If the tabs still do not appear after a reasonable amount of time, one suggestion to "refresh" is to click on the main Proctorio tab. The confirmation message in Figure 7 should appear confirming the plug-in is currently running.
- Please consider setting a longer testing window (we recommend 2-3 days) and **please do not set a testing window where all students will be testing at the same time**. Large numbers of students starting a test at the same time may raise red flags (indicating possible collusion), putting more strain on the Proctorio servers. This could result in longer wait times and connection errors for students. It is also impossible for the Testing Center to administer an in-person version of the exam to an entire class at once.
- Proctorio may not prompt the test taker for a panorama scan of the testing environment **until they have already begun the test**. Please take this into consideration when setting the test's time limit and when you are reviewing sessions.
- Please only consider the use of Proctorio and Testing Center services for **high-stakes examinations**. Alternate assignments (unproctored quiz, take-home exam, alternative project, etc.) should be considered for assessments that allow multiple open-resources and materials, including the Internet. Such assessments complicate the proctoring process greatly for both automated machine proctoring and human proctoring. Some uniformity is required for quality control and to reduce the number of false positives reported by Proctorio Gradebook or physical testing centers.
- Research on the use of remote proctoring and students' experience with test taking have found that there were decreased incidents of cheating compared to unproctored tests, and had no effect on students' test performance, however, please note that test takers generally

have a more **negative reaction to remote proctoring**. One suggestion to ease student concerns is to remind them that only you have access to reviewing sessions. Also, the Proctorio Chrome Extension can be uninstalled between each session if students have privacy concerns.

- For the best user experience, Proctorio recommends displaying all questions at once rather than one at a time. A slow connection speed and frequent page changes could cause issues, such as an unwanted loading delay between each question. Long exams with large images, media, or other embedded content could be an exception to this; if you must enable these settings it is recommended to take loading time into consideration when setting the test's time limit.
- Make sure that students are given the opportunity and encouraged to take a practice quiz with Proctorio before an exam for credit is deployed. This will ensure that the entire class, including those with accessibility concerns, will be ready to use Proctorio or have an alternative in place.

Getting Help

For more detailed guides, including video tutorials, please consult the [UM System Teaching Tools Proctorio website](#).

More documentation and videos on using Proctorio may also be found on Proctorio's Support Site. To access it, click on the **Proctorio Extension icon in Chrome**, then choose **Help and Support**.

Please contact elearning@umsystem.edu if you have questions.

proctorio

**Proctorio Gradebook
in Canvas**

Proctorio Gradebook Overview - Canvas

The Proctorio Gradebook displays high-level information about each remotely proctored exam to provide a quick visual indication of what should be investigated further. You can then go into an individual student's attempt for additional information.

1. Click on **Quizzes** from the left side panel.
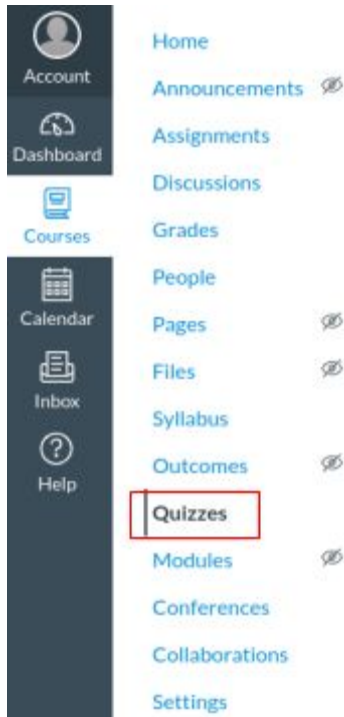
2. Choose the quiz you wish to review and click on it.

3. Choose **View Proctorio Gradebook** from the right-side panel.

4. The new page will populate displaying the Proctorio Gradebook. It contains the information that was collected during the remotely proctored exam.

5. The Proctorio Gradebook contains the following information:
- Student Name
- Submission Day/Time
- Attempt Number
- Score
- Annotations
- Abnormalities
- Suspicion Level

The suspicion level is a percentage that represents low, medium or high suspicion for an exam. The suspicion level is a quick calculation based on the aggregation of frames during the exam which were deemed suspicious and the detection of abnormal behavior. The Proctorio Gradebook will color code and list students by a suspicion score to highlight the suspicious attempts for review.

The suspicion indicators will be listed from highest level, with percentage ranking (indicated in red), to the lowest level (indicated in green), which enables the instructor to quickly scan a class or assessment group and identify those that may need further review.

6. **Proctorio Settings** in the Proctorio Gradebook will display two options:
- Proctorio Behavior Settings
- Proctorio Exam Settings (the Exam Settings will become locked after an exam has been started by a test taker).

The **Behavior Settings** do not turn off the collection of data, this is done through the Exam Settings. Instead, they set the weight of the Behavior Flags.
The Behavior Settings are customizable and can be changed at any time.
Behavior Settings should reflect the type of exam that is being given.

The **Proctorio Frame Metrics** will compare one test taker's actions to the rest of the exams in the class.

Abnormalities will be shown in the Proctorio Gradebook and the details can be viewed under the exam video player. If you want this data to be collected, ensure the Record Video and Record Audio exam settings are enabled for the assessment. The abnormalities are controlled by the Behavior Settings, which turn each abnormality on or off.

When combined with behavioral, environmental, and technical abnormalities, the machine learning within Proctorio's platform is able to strategically identify the students that need review, and then easily flag and identify specific violations in an exam attempt. Proctorio flags suspicion based on the instructors criteria when applying the behavior settings.

Computer Based Abnormalities

Navigating Away	Keystrokes	Copy & Paste	Browser Resize	Mouse Movement	Scrolling

Clicking

Environmental Abnormalities

Audio Levels	Head and Eye Movement	Leaving the Room	Multi-Face

Technical Abnormalities

Exam Duration	Start Times	End Times	Exam Collusion
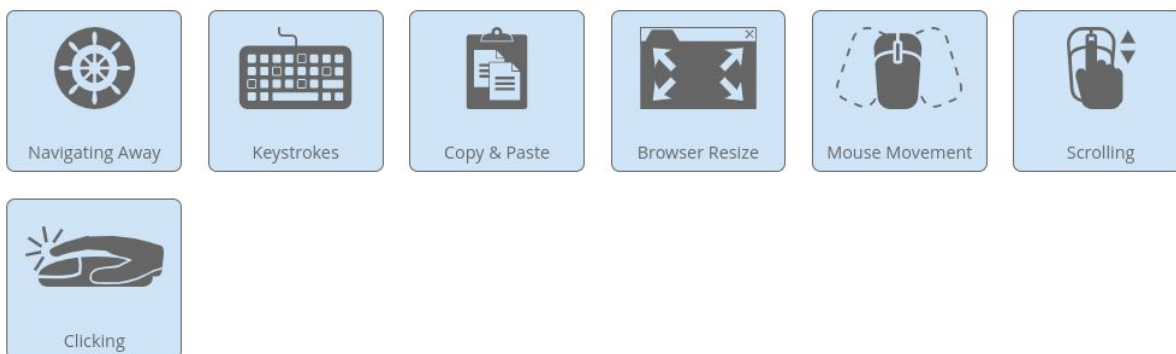
7. The **Proctorio Map** will display where all the test takers have taken the exam. Depending on the location, it could display local locations or tests taken globally.
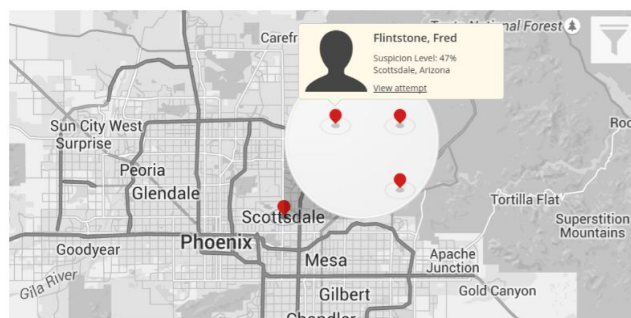
8. **Display options** will provide a variety of ways to change how Proctorio Gradebook is displayed. FERPA controls will hide the test-taker's personally identifiable information in case information in the Proctorio Gradebook needs to be exported and/or shared.

Display potential hardware issue events		Learn more about detected potential hardware issue events.
Display Suspicious IDs		Learn more about suspicious ids.
Gradebook Tour	Start Tour	
Sort by Last Name		
Display Help Icons		
Infinite PDF		
Show unmatched attempts		Learn more about unproctored attempts.
FERPA Controls		Hide ID Learn more about FERPA controls.
		Hide Names
		Hide Grades
		Hide Video
		Hide Screen
		Hide Location

9. **Export Options** will allow you to export the current quiz to a PDF. Proctorio provides several options to customize the PDF.

Gradebook PDF Report

Download the Gradebook information for all test takers in PDF format.

Include the following sections:

Exam Information

Proctorio Exam Settings

Proctorio Behavior Settings

Test taker Results

Attendance Report

Generate PDF

ID Image Export

Download all test taker ID images. Each ID will be watermarked with your name and a timestamp.

Download ID Images

10. Proctorio Exam Results

If you need more details on a particular attempt, clicking on that row in the gradebook will display the Exam Video Player. You will be able to see a timeline that shows suspicion levels throughout an exam attempt as red, yellow or green.
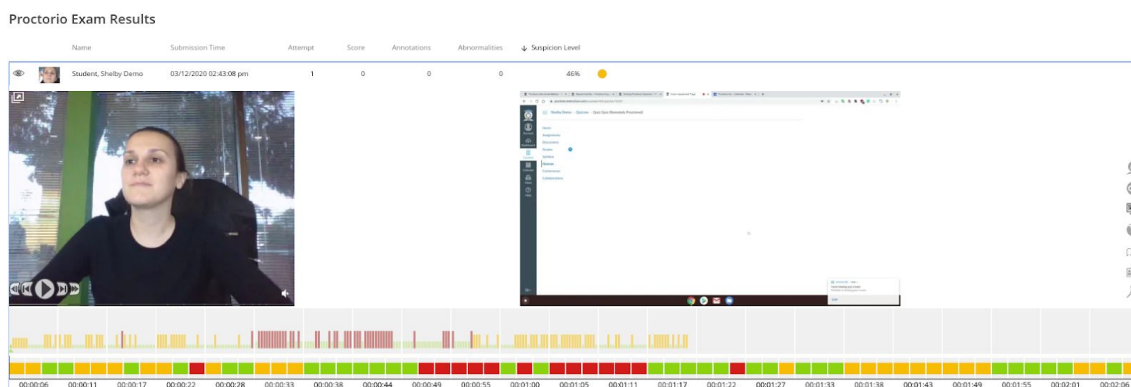
Proctorio Exam Video Player Icons

The recording can be controlled with video playback controls. Each button contains a title tag. This shows a small description if you hover over the button for a few seconds.

The **Incident Log** will display any potential incident based on the instructor's settings. Each flag has its own messaging in the incident log. The Incident Log can be viewed by clicking the Proctorio icon at the top of the information toolbar on the right side of the screen.

The Incident Log automatically scrolls during play to keep up with the video player.

The **Display Room Scan** tool will display the student's room scan attempts when the Record Room option is enabled.

During the room scan, the student is prompted to record a 360-degree video of their exam environment. Once completed the student resumes their attempt.

To playback the room scan, simply click and drag the cursor to the right. If there were multiple room scans you can select the individual attempt by selecting the small dots.

The **Display screen recording** will allow the instructor to view exactly what the test-taker was seeing on their monitor.

This can include other programs, websites, etc.

The **Display Location** Information will record location and internet information when the test taker begins their remotely proctored exam.

The geo-location data can be accessed from the globe icon within the Proctorio exam video player toolbox on the right side.

The **Display Annotations** option will allow the instructor to leave comments on the test taker's video on a frame by frame basis. These comments can be exported along with the PDF for future reference in case of a grade inquiry.

Annotations can be color coordinated to highlight their relative suspicion. The color of the annotation can be selected by clicking on the desired color box. The annotated frame will show up in the timeline at full height and in the color that was selected. This will also cause the section in the overall timeline to turn red. This is to give an indication that this area of the video should be looked at.

The number of annotations for a video is displayed on the annotations icon in the toolbox.

Adding an annotation
To add the annotation, simply click the annotations icon in the Proctorio exam video player toolbox on the frame you wish to leave a note for. Enter your message and click the "Save Annotation" button.

Updating an annotation
To make a change to an existing annotation, go to the frame with the annotation and click the annotations icon. This will load the previous annotation into the text area for editing. When complete, click the "Save Annotation" button.

Deleting an annotation
To delete an annotation, go to the frame with the annotation and click the annotations icon. This will load the previous annotation into the text area for editing. Erase all the content within the text area. When complete, click the "Save Annotations" button.

Incident Log FIlter

There are three view states:
- Proctorio Incidents Only
- Professor Annotations Only
- Both Proctorio Incidents and Professor Annotations

Display Identification
Enabling the Verify ID option will require the test taker to hold up his or her ID card to the camera during the exam pre-checks. The image can be reviewed in the Proctorio exam video player in the Gradebook.

Proctorio uses machine learning to scan and automatically detect ID cards such as driver's licenses and test taker's IDs. When Proctorio detects an ID, it will automatically capture the image and display it in the Proctorio Gradebook.

Proctorio will automatically highlight ID cards that are suspicious. That could include IDs that are blurry, damaged or of an unrecognized format. These IDs will be shown with a red ID icon.

Display PDF export options
You can export the current quiz to a PDF file. Proctorio provides options to customize the PDF. The only page that is required is the Summary page.

You can customize the PDF enabling and disabling different pages:
- Incident Log
- Abnormalities
- Exam Settings
- Professor Annotations

Exam Review - Attempt Ended Messaging
Proctorio records the reasons why exam attempts ended to give full context as to what happened during the exam.

The attempt ended when the test taker submitted the exam. Learn more about this alert.
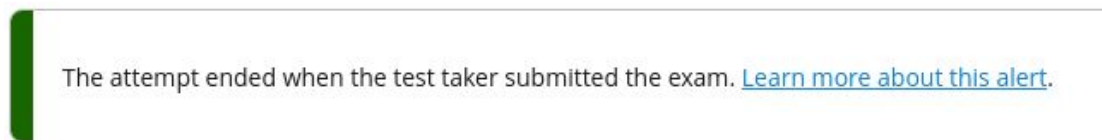
Attempts that were ended for suspicious reasons will contain a red flag within the Gradebook row.

Computer Performance Index
The index will give you the full details about the test taker's computer and internet connection when going through the System Prechecks, as well as, throughout the exam.

To display all the collected data click anywhere on the Computer Performance Index to expand it.

The Proctorio Computer Performance Metrics are a measure of the test-taker's machine when taking an exam. These values take into account the computing power of the machine and the internet connection.

Web Traffic Index
This option will record any web page visited during the exam. When you enable this option, the URL of the website will be collected as well as a screenshot of the page that the test taker is visiting.

To ensure that these events are recorded in the Incident Log, the Navigating Away behavior setting must be set to have a weight of one or more.

Abnormalities
Abnormal behaviors are calculated with respect to the rest of the class and are factored into the suspicion level. Test taker's who have behaviors that are slightly different from the rest of the exam session will be highlighted.

There must be more than three attempts to calculate the exam abnormalities. It is encouraged to only use this information after all exams have been completed.

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Proctorio Exam Set up (/toolsets/carmencanvas/guides/proctorio-exam-set)

Proctorio Exam Set-up

Exam Settings Canvas FINAL

Proctorio Exam Set-up (/toolsets/carmencanvas/exam-set)

Proctorio Lockdown Options (/toolsets/carmencanvas/guide exam-set/proctorio-lockdown-)

Proctorio Recording Options (/toolsets/carmencanvas/guide exam-set/proctorio-recording-)

Proctorio Verification Options (/toolsets/carmencanvas/guide exam-set/proctorio-verification

During an exam session, Proctorio monitors activity and then assigns each submission a percentage score. The higher the percentage, the higher probability that academic misconduct occurred.

Please note that a high score does not automatically mean that academic misconduct occurred. A siren outside, a loud noise downstairs, a reflection in a mirror, etc. could all trigger potential Proctorio warnings even though no misconduct occurred.

For this reason, Proctorio settings should be closely considered before an exam begins. Please note that very high levels of Proctorio scrutiny will result in high Proctorio suspicion levels. As you become accustomed to Proctorio results and your Proctorio settings, you will be able to determine when it is appropriate to check Proctorio flags.

Exam Set-up

If you have not already enabled Proctorio in your Carmen quiz, see
Enable Proctorio in a Carmen quiz (/toolsets/carmencanvas/guides/getting-started-proctorio/enable-proctorio-carmen-quiz)
.

This is Exhibit BM referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

_____
A Commissioner for taking Affidavits for British Columbia

1. From within the quiz click the **Proctorio Settings** tab.

2. To enable or disable an option, click on the associated tile. An enabled option will turn **light blue**.

3. After making your selections, **save and publish** the exam.
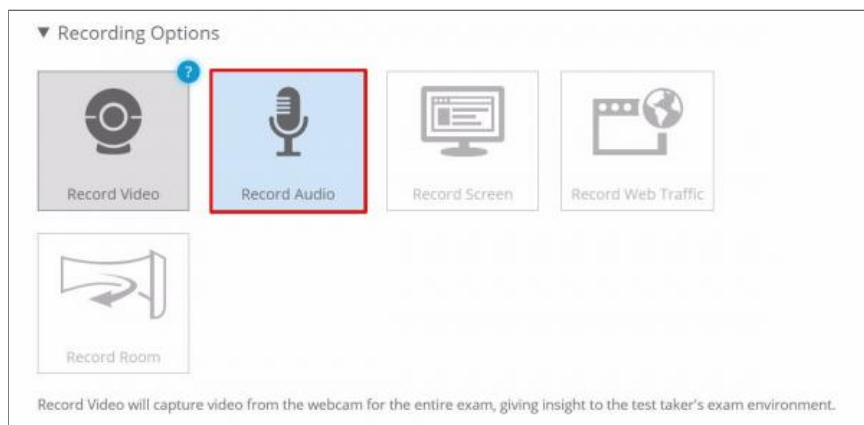
There are three categories of exam settings:

- Lockdown options (/node/323) set the restrictions on the student's computer during the exam. This will prevent students from using unauthorized materials.

- Recording options (/node/324) dictate what information will be collected during the exam.

- Verification options (/node/325) are used to verify the student's identity and that their hardware is not just working, but is set up correctly.

Proctorio Lockdown Options ▶

Search for Resources

Q

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Proctorio Lockdown Options

Lockdown Options set the restrictions on the student's computer during the exam. This will prevent students from using unauthorized materials.

▼ Lock Down Options

1 Force Full Screen   **2** Only One Screen   **3** Disable New Tabs   **4** Close Open Tabs

5 Disable Printing   **6** Disable Clipboard   **7**   **8** Right Click

9 Prevent Re-entry

These options determine what will be restricted during the exam.

This is Exhibit BN referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

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Proctorio Exam Set-up (/toolsets/carmencanv exam-set)

▶ Proctorio Lockdown Options (/toolsets/carmencanvas/guide exam-set/proctorio-lockdown-

  Proctorio Recording Options (/toolsets/carmencanvas/guide exam-set/proctorio-recording-

  Proctorio Verification Options (/toolsets/carmencanvas/guide exam-set/proctorio-verification

1. **Force Full Screen**: This option will open the exam in full-screen mode and is a standard lockdown browser function. Forcing full screen will not let the student leave the exam to use other websites or programs.

   When paired with *Only One Screen*, Proctorio creates an effective preventive measure, ensuring students do not use outside resources on their computer during their exam.

   The student will not be able to minimize the exam or navigate away from the exam page (e.g., use other programs) or the exam will be immediately submitted. The length of time before a student is removed from an exam can be adjusted to suit different test requirements.

   There are three settings for Force Full Screen:

a. *Lenient (30 seconds)* - Allows students to be out of Full Screen for 30 seconds before being kicked out of the exam.

b. *Moderate (15 seconds)* - Allows students to be out of Full Screen for 15 seconds before being kicked out of the exam.

c. *Severe (immediate)* - Students are kicked out of the exam immediately upon exiting Full Screen.

2. **Only One Screen**: This option will force students to unplug any other monitors prior to starting their exam. This ensures that there are no notes or websites on another monitor during the exam. When paired with *Force Fullscreen*, Proctorio creates an effective preventive measure, ensuring students do not use outside resources on their computer during their exam.

3. **Disable New Tabs**: This option disables the opening of new tabs during the exam. This prevents the student from creating new tabs or windows to access sites after the exam has begun.

   However, it does not mean that the student will not have access to other website content. If the student has tabs open before the exam begins, then they will be able to look at these tabs.

   There are three settings for Disable New Tabs:

   When paired with *Close Open Tab*s, the student is unable to access websites during the exam.

   a. *Tabs Allowed*: Students are permitted to open additional tabs within the Chrome browser.

   b. *Disable New Tabs*: Students cannot open additional tabs within the Chrome browser.

   c. *In Quiz Links Only*: Students are permitted to access links provided by the instructor within the quiz.

4. **Close Open Tabs**: This ensures there are no tabs open prior to starting the exam. This will force students to close any other websites they may have open, such as a YouTube page with course lectures. When paired with *Disable New Tabs*, the student cannot visit other websites during the exam.

5. **Disable Printing**: This setting will prevent the student from printing the exam via keyboard shortcut or right-click and print.

   This is a preventive measure to ensure students cannot share exam questions or paste answers from outside sources.

   When paired with *Disable Right Click* and *Disable Clipboard* your exam is secure and cannot be shared with other students.

6. **Disable Clipboard**: This prevents students from copying and pasting, ensuring that exam content is not lifted from or inserted into the quiz page. This is a preventive measure to ensure students cannot share exam questions or paste answers from outside sources.

   When paired with *Disable Right Click* and *Disable Printing* your exam is secure and cannot be shared with other students.

7. **Clear Cache**: This will remove all traces of the exam from the student's computer after the exam has completed. This will prevent high-tech means of exam distribution.

8. **Disable Right Click**: This setting prevents the student from right-clicking within the exam window. This feature protects against accessing the print menu, page source, and developer tools via the mouse.

9. **Prevent Re-entry**: This setting allows instructors to choose whether students may re-enter the exam, re-enter the exam with approval from Proctorio, or submit the exam in one sitting without exception.

   It may be enabled to prevent students from receiving potentially unauthorized help off-camera while the remote proctor is not recording.

   - Option 1: *Allow Re-entry* permits students to re-enter the exam.

   - Option 2: *Re-entry with Agent* authorizes Proctorio staff to allow students back into the exam.

   - Option 3: *No Re-entry* denies re-entry of the exam regardless of the reason.

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Proctorio Recording Options

The recording options dictate what information will be collected during the exam.

These options determine what information will be recorded during the exam.

Proctorio Exam Set-up (/toolsets/carmencanv exam-set)

Proctorio Lockdown Options (/toolsets/carmencanvas/guide exam-set/proctorio-lockdown-

▶ Proctorio Recording Options (/toolsets/carmencanvas/guide exam-set/proctorio-recording-

Proctorio Verification Options (/toolsets/carmencanvas/guide exam-set/proctorio-verification

This is Exhibit BO referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

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1. **Record Video**: This option will turn on the student's webcam and record the entire exam. The video will automatically be analyzed for head movements, eye movements, and mouth movements. To verify that a student has a proper webcam before the exam starts, enable the *Verify Video option* within the *Additional Exam Settings*.

2. **Record Audio**: This option will turn on the student's microphone and record the entire testing session. The audio can be reviewed to determine if the student is talking to someone in the room and potentially relaying questions or answers. To verify that the student has proper microphone levels before the exam starts, enable the *Verify Audio option* within the *Additional Exam Settings*.

3. **Record Screen**: This option will capture the student's desktop, so you can see exactly what they were looking at throughout the exam. This will show if the student is using an unauthorized program or leaving the quiz for any reason.

   Proctorio will take screenshots when the following are triggered:

   - Student answers a question

   - Student clicks the mouse

- Student copies values

- Student pastes values

- Student resizes their browser

- Student leaves the exam page

The screenshots are available within the video player by accessing the Exam Replay mode.

Only one screen can be recorded. It is highly recommended that this option be paired with the *Only One Screen* lockdown setting (/node/323) .

4. **Record Web Traffic**: This option will capture any website that the student goes to during the exam. Proctorio will record the URL as well as a screen capture of the site as they saw it. This is a great way to ensure students are only going to authorized websites during an exam.

The webpages will be made available in the *Incident Log* of the Proctorio exam video player. To ensure these events are recorded in the incident log, the **Flag New Windows or Tabs** behavior setting must be **set to have a weight of one or more**.

A screenshot is taken in case a student is accessing materials that are behind a login, such as using a web chat application or browsing a forum. The screenshot will provide a view of the page exactly how the student saw it.

5. **Record Room**: This setting prompts the student to show you his or her test environment during an exam. When this feature is enabled, the student is required to slowly scan the room and work area with his or her webcam or laptop. The student will be asked to do this randomly throughout the exam or after surpassing a certain level of suspicious behavior.

Record Room will last for 15 seconds. This time does count against exam time. Because of this, Proctorio recommends adding additional time to exams when Record Room is enabled.

Protocols for performing a room scan during Record Room are institution and instructor specific. That is, Proctorio recommends that instructors specify how to perform Record Room in the quiz instructions based on what the institution or instructor wants to see. Proctorio offers these general instructions to students on how to perform a room scan:

How do I perform a room scan?
A panorama of the room scan will be added to the Proctorio Gradebook. Instructors may review the student's room scans by selecting the Room Scan button.

This is a great feature for high stakes exams. It allows an instructor to see if the test taker is using any unauthorized materials, or if there are other computers or people in the room.

There are three settings for Record Room:

a. *Record Room Off* - Instructors may leave Record Room disabled so that Record Room is never triggered either at the beginning or during the exam.

b. *Intelligent Scan* - Students are asked to perform a Record Room scan at the beginning of the exam and at key intervals during the assessment (depending on the length of the exam). This setting will also respond to student activity depending on other settings selected and level of suspicion for each student. Suspicious behavior will trigger additional room scans. Students will perform room scans within the allotted exam time, so it is advisable to factor that time into the amount of time permitted.

c. *Scan at Start* - This setting will ask the student to perform the Record Room scan once, at the beginning of the assessment. This will occur a few minutes into the exam in order to fully capture the test environment. Room scans will be performed within the allotted exam time, so it is advisable to factor that time into the amount of time permitted.

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Proctorio Verification Options (/toolsets/carmencanvas/guides/proctorio-exam-set/proctorio-verification-options)

Proctorio Verification Options

Verification Options Overview

▶

Proctorio Exam Set-up (/toolsets/carmencanv exam-set)

> Proctorio Lockdown Options (/toolsets/carmencanvas/guide exam-set/proctorio-lockdown-

> Proctorio Recording Options (/toolsets/carmencanvas/guide exam-set/proctorio-recording-

▶ Proctorio Verification Options (/toolsets/carmencanvas/guide exam-set/proctorio-verification

Verification options are used to verify the student's identity and that their hardware is not just working, but is set up correctly. This ensures that the data in the gradebook is of high quality.

▼ Verification Options

① Verify Video   ② Verify Audio   ③ Verify Desktop   ④ Verify ID   ⑤ Verify Signature

Verify ID will require the student to show a photo identification card before beginning the exam.

1. **Verify Video**: This option will ensure that the student is clearly visible in the webcam feed. This will verify that the webcam is collecting images, the lighting is proper, and that the student is not pointing the camera at the ceiling.

2. **Verify Audio**: This option makes sure that the audio levels in the room are appropriate and that the microphone levels are adequate. This will ensure that Proctorio can distinguish the white noise of the room from a talking level and that the student is not taking the exam in a noisy environment.

3. **Verify Desktop**: This option creates an additional check during the system diagnostic test to ensure the student's screen recording is functioning properly.

4. **Verify ID**: This option will require students to hold up their identification to the camera during the exam pre-checks in order to be photographed. The image can be seen in the Proctorio exam video player. **A university issued BuckID is the preferred ID for use with Proctorio.** If students are unable to obtain a BuckID, their driver's license or passport may be used as an alternative.

5. **Verify Signature**: This option is an added feature for actively confirming a student's commitment to academic integrity prior to an exam.

◄ Proctorio Recording Options

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Proctorio Gradebook

103 - Canvas Gradebook Location

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The Proctorio gradebook displays high-level information about each remotely proctored exam to provide a quick visual indication of what should be investigated further.

This is done primarily through the behavior preview, a small timeline that shows suspicion levels throughout an exam attempt as red, yellow or green.

If a professor wants more detail on a particular attempt, clicking on that row in the gradebook allows for the professor to view the *Exam Video Player*. This provides access to all exam footage and all information collected by Proctorio.

Proctorio accesses the CarmenCanvas Gradebook to retrieve student names, profile pictures, and the score for the exam.

You may access the gradebook by navigating to a quiz and selecting it. On the next page simply click **View Proctorio Gradebook** beneath the SpeedGrader button.

Once the Proctorio gradebook is loaded, all of the test takers' attempts will be displayed, sorted by suspicion level (/toolsets/carmencanvas/guides/proctorio-suspicion-level) .

▼ **Gradebook Columns**

The Proctorio gradebook contains the information that was collected during the exam. Proctorio references information from CarmenCanvas as well as its behavior information to create a comprehensive exam review system.

Each column can be sorted for quick access to the information you need. Learn more.

The Proctorio gradebook contains:

- Student name
- Attempt number
- Score
- Annotations
- Abnormalities
- Suspicion level
- Behavior preview

The last column contains a box that is labeled by color based on the level of suspicion assigned to the exam attempt. Proctorio uses a stoplight color scheme to show suspicion levels. Red indicates a high level of suspicion. Yellow indicates some suspicion, and green indicates little suspicion.

▼ **Sorting Gradebook Columns**

Proctorio provides the ability to sort each column in the Proctorio gradebook. To do so, click on the column header that you wish to sort by. To change the sort option (from ascending to descending or vice versa), simply click the column header again.

There is a visual indication of which sorting method is currently active and on which column. The column that is being sorted will have a up or down pointing triangle to the right side.

An upwards pointing triangle is sorting by ASCENDING. This puts the smallest value on top.
A downwards pointing triangle denotes sorting by DESCENDING. this puts the largest value on top.

Sorting can be an effective way of finding the most suspicious students or grouping students to view each of their attempts.

The default sort option is by
suspicion level (/toolsets/carmencanvas/guides/proctorio-suspicion-level) , descending. This shows
the most suspicious students at the top of the gradebook.

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Proctorio Suspicion Level

Proctorio's first goal is to uphold academic integrity by discouraging cheating. However, some incidents will occur. When these do happen, Proctorio makes the identification of these cases as simple as possible. One of the ways is through the suspicion level.

> **!** Instructors should note that there is no Proctorio outcome that unequivocally indicates academic misconduct.

The suspicion level is a percentage that represents low, medium, or high suspicion for an exam.

The suspicion level is a quick calculation based on the aggregation of frames during the exam which were deemed suspicious and the detection of abnormal behavior. If the suspicion level shows a large percentage, then this is an exam that should be considered for further review.

The suspicion level will increase or decrease depending on how heavily each Behavior Setting is weighted and which Abnormalities are enabled.

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Proctorio Policy Settings
Behavior Settings

Before or after setting up the exam, the following Behavior Settings can be adjusted to determine what information shows up in the reports and the severity levels of this information.

Behavior Settings allows instructors to set the weight of suspicious behaviors using the preset configurations or customize to their preferred metrics.

Click on each option to learn more.

Recommended
Behavior settings recommended by Proctorio, based on the exam settings

Lenient
Multiple behavior violations are required to trigger suspicion

Moderate
Some behavior violations will trigger high suspicion levels

Group Exam
Allows multiple test takers and increased audio activity

Open Note
Allows other applications and looking off screen

Custom
Set custom severity levels for behaviors

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Before or after setting up the exam, the following Behavior Settings can be adjusted to determine what information shows up in the reports and the severity levels of this information.
Behavior Settings a...   ✕   mize to their preferred metrics.

Click on each optio...

👍

Recommended

Behavior settings recommended by Proctorio, based on the exam settings

- The Recommended setting will engage the most efficient behavior setting based on the exam environment.

- The settings will automatically adjust the Behavior Settings to the appropriate levels that correspond to the recording and lock-down options chosen.

- For example, if an exam has the Record Video option enabled, suspicion levels for head and eye movement will adjust accordingly.

Recommended

Behavior settings recommended by Proctorio, based on the exam settings

Lenient

Multiple behavior violations are required to trigger suspicion

Moderate

Some behavior violations will trigger high suspicion levels

Group Exam

Allows multiple test takers and increased audio activity

Open Note

Allows other applications and looking off screen

Custom

Set custom severity levels for behaviors

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Proctorio Policy Settings

Behavior Settings

Before or after setting up the exam, the following Behavior Settings can be adjusted to determine what information shows up in the reports and the severity levels of this information.
Behavior Settings allows instructors to set the weight of suspicious behaviors using the preset configurations or customize to their preferred metrics.   ✕

Click on each optio

Lenient

Multiple behavior violations are required to trigger suspicion

- This is the lowest setting for Proctorio Behavior Settings. It is the preferred setting for low stakes quizzes. By enabling this behavior setting, multiple suspicious events in the same frame will be required to trigger a higher level of suspicion.

- It mainly tracks longer exam completion time, discrepancies in start and end times and tracks IP addresses.

Recommended

Behavior settings recommended by Proctorio, based on the exam settings

Lenient

Multiple behavior violations are required to trigger suspicion

Moderate

Some behavior violations will trigger high suspicion levels.

Group Exam

Allows multiple test takers and increased audio activity

Open Note

Allows other applications and looking off screen

Custom

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Behavior Settings

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Behavior Settings a...

preferred metrics.

Click on each optio...

Moderate

Some behavior violations will trigger high suspicion levels

- Moderate is the middle setting of the Proctorio Behavior Settings. It is the preferred setting for exams that carry more weight than a quiz, but less than a final exam.

- By enabling this behavior setting, some suspicious events will trigger higher levels of suspicion, while others will require multiple activities within the same frame to trigger a high level of suspicion.

- In addition to the previous settings, this tracks abnormal navigation, copying and pasting, multiple faces and abnormal head and eye movements.

Recommended
Behavior settings recommended by Proctorio, based on the exam settings

Lenient
Multiple behavior violations are required to trigger suspicion

Moderate
Some behavior violations will trigger high suspicion levels

Group Exam
Allows multiple test takers and increased audio activity

Open Note
Allows other applications and looking off screen

Custom
Set custom severity levels for behaviors

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Behavior Settings

Before or after setting up the exam, the following Behavior Settings can be adjusted to determine what information shows up in the reports and the severity levels of this information.
Behavior Settings allows instructors to set the weight of suspicious behaviors using the preset configurations or customize to their preferred metrics.

Click on each option to learn more.

Recommended

Lenient

Moderate

✕

Group Exam

Allows multiple test takers and increased audio activity

- This setting should be used for any exams where collaboration is allowed. It will ignore audio levels, head movements, eye movements, and multiple faces.

- It also flags things like opening new windows and tabs, browser resizing, abnormal keystrokes or extra face detection.

Group Exam

Allows multiple test takers and increased audio activity

Open Note

Allows other applications and looking off screen

Custom

Set custom severity levels for behaviors

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Proctorio Policy Settings
Behavior Settings

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Behavior Settings allows instructors to set the weight of suspicious behaviors using the preset configurations or customize to their preferred metrics.

Click on each option to learn more.

Recommended

Lenient

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✕

Open Note

Allows other applications and looking off screen

- The Open Note setting allows students to look at notes on their desk or visit external webpages.
- It ignores new tabs, copy and paste, browser resizing, head and eye movements.
- It does still track the previous settings of exam timing, IP tracking, and multiple face detection. It also tracks audio, keystrokes and copy and paste.

Group Exam

Allows multiple test takers and increased audio activity

Open Note

Allows other applications and looking off screen

Custom

Set custom severity levels for behaviors

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Proctorio Policy Settings

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Behavior Settings allows instructors to set the weight of suspicious behaviors using the preset configurations or customize to their preferred metrics.

Click on each option to learn more.

Recommended

Lenient

Moderate

✕

Custom

Set custom severity levels for behaviors

- The custom tile allows you to set the weights of each individual behavior setting and turn on and off each abnormality.

- The custom settings can be used to dial in the setting to match the exact behavior profile that you are looking for within the current exam.

Group Exam

Allows multiple test takers and increased audio activity

Open Note

Allows other applications and looking off screen

Custom

Set custom severity levels for behaviors

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Proctorio Policy Settings
Computer Based Abnormalities

Computer Based Abnormalities compare one student's actions to their peers on the exam. This will highlight statistically significant differences in a student's behavior with computer functions.

Click on each option to learn more.

Navigating Away	Keystrokes	Copy & Paste	Browser Resize	Mouse Movement	Scrolling

Clicking

412

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NAVIGATION MENU   ‹ ›

Proctorio Policy Settings
Computer Based Abnormalities

×

Navigating Away

- Navigating Away will alert the professor when the student has left the exam environment significantly more or less than the other students.

- If open notes are allowed, you may want to know when students are accessing external websites or programs more than other students.

[CLICK TO SEE INCIDENT LOG]

Elapsed Time	Incident
00:00:43	🔍 🖥 Test taker navigated away from the quiz page
00:00:44	Test taker accessed a webpage 🔍 📑 https://mars.nasa.gov/news/8419/more-testing-for-mars-insights-mole/?site=insight Test taker navigated away from the quiz page
00:00:45	🔍 🖥 Test taker navigated away from the quiz page

- The Incident Log in the reports shows when and were the student navigated away from the exam experience or to other web pages, based on instructor settings.

Clicking

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NAVIGATION MENU

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Proctorio Policy Settings

Computer Based Abnormalities

✕

Computer Based Al
differences in a stud

Click on each optio

Keystrokes

- This will alert the professor when the student typed on the keyboard significantly more or less than the other students.

- This information could tell you something about the test taker's process. For example, if you have a lot of written responses in the exam, you may want to enable this option because a student using significantly fewer keystrokes could indicate they were lifting their responses from an outside source.

- Using this in conjunction with Record Screen could show you if the student is getting information from external sources.

Navigating Away   Keystrokes   Copy & Paste   Browser Resize   Mouse Movement   Scrolling

Clicking

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Proctorio Policy Settings   ×

Copy & Paste

- This will alert the professor when students have copied or pasted values significantly more or less than the other students.

- Note--you can turn off their ability to copy and paste in other option settings. This behavior setting is mostly relevant when you have allowed copying and pasting and want to track how much students are doing that.

- For example, an attempt showing a higher amount of clipboard activity may mean the student copied material into the exam or took question material out of the exam.

- Enabling Record Screen in conjunction with tracking copy and paste, will show what the student copied and pasted and other programs or websites they may have accessed.

Computer Based A...   ...y significant differences in a stud...

Click on each optio...

Navigating Awa...   Scrolling

Clicking

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Proctorio Policy Settings
Computer Based Abnormalities

Computer Based Abnormalities compare one student's actions to their peers on the exam. This will highlight statistically significant differences in a stud

Click on each optio

Browser Resize

- This will alert the professor when the student has resized the browser significantly more or less than the other students.

- This could indicate students who are attempting to hide unauthorized materials behind the browser by resizing the browser to make them visible.

Navigating Away   Keystrokes   Copy & Paste   Browser Resize   Mouse Movement   Scrolling

Clicking

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Proctorio Policy Settings

Computer Based Abnormalities

Computer Based Abnormalities compare one student's actions to their peers on the exam. This will highlight statistically significant differences in a stud

Click on each optio

✕

Mouse Movement

- This will alert the professor when the student has moved the mouse significantly more or less than the other students.

Navigating Away   Keystrokes   Copy & Paste   Browser Resize   Mouse Movement   Scrolling

Clicking

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Proctorio Policy Settings
Computer Based Abnormalities

Computer Based Abnormalities compare one student's actions to their peers on the exam. This will highlight statistically significant differences in a student's behavior with computer functions.

Click on each option to learn more.

Navigating Awa...   Scrolling

Clicking

- This will alert the professor when the student has clicked the mouse significantly more or less than the other students.
- This options is helpful in multiple choice exams to see if the student is guessing by process of elimination.

Clicking

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Proctorio Policy Settings

Creating Profiles

- Profiles can be created within your Connect Proctorio settings so that you can have your own defaults of the consistent settings you select for similar assessment types.

- Instead of choosing settings individually, you will be able to select your default and have all of your Proctorio settings apply to the assessment at once.

If you would like to reuse these settings in the future, you can save them in a new profile.

CREATE NEW PROFILE

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Proctorio Policy Settings

Creating Profiles

Audio Levels   Head and Eye Movement   Leaving the Room   Multi-Face

Abnormal number of faces detected will highlight

Technical Abnormalities

Exam Duration   Start Times

Exam Collusion will highlight test takers who took

If you would like to reuse these settings in the future, you can save them in a new profile.

CREATE NEW PROFILE

Save this profile to your Proctorio account for later use.

🔧

Name:

Exam Settings for Online

Description:

Settings for 3 exams in semester. Different settings for Mid-Term & Final.

Default Profile: ☑

Save   Close

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Proctorio Policy Settings

Environmental Abnormalities

Environmental   ant
differences in   resources.

Click on each   ✕

Head and Eye Movement

- This will alert the professor when the student is looking away from the computer significantly more or less than the other students.

- This option is a good idea in all exams with video recording.

CLICK TO SEE INCIDENT LOG

	Name	Submission Time	Attempt	Score	Annotations	Abnormalities	Suspicion Level			
👁	Student, Andreav...	03/02/2020 04:27:...	1	1	2	0	86%	●	📇	🚩

Elapsed Time	Incident
00:00:28	Students was looking away at something
00:00:30	
00:00:35	Test taker navigated away from the quiz page
00:00:35	

- In the reports, you can click into the suspicious behaviors and determine what the student was doing during this time.

- In this case, the student is looking down, potentially at notes.

Proctorio Policy Settings

Environmental Abnormalities

Environmental Abno...   significant
differences in a stud...   exam resources.

Click on each optio...

Leaving the Room

- Leave the Room will highlight test takers who leave the exam frame altogether during an exam.

Head and Eye Movement

Leaving the Room

Multi-Face

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Proctorio Policy Settings

Environmental Abnormalities

Environmental Abno... ...significant
differences in a stud... ...n exam resources.

Click on each optio...

×

Multi-Face

- This will alert the professor when multiple people can be seen in the exam video.
- This could capture a student who is trying to get help with their exam from someone else in the room.

Head and Eye
Movement   Leaving the Room   Multi-Face

Proctorio Policy Settings

Frame Metrics

- In this version of the report, more students are now showing as needing to be reviewed because the severity measure of certain metrics was increased.

Proctorio Exam Results

	Name	Submission Time	Attempt	Score	Annotations	Abnormalities	Suspicion Level			
👁	Student, Andreav...	03/02/2020 04:27:...	1	1	2	0	86%	🔴	📇	🚩
👁	Student, Vuk De...	03/02/2020 09:23:...	1	3	0	1	39%	🟡		🕵
👁	Student, Alekhya ...	02/27/2020 10:36:...	2	3	0	0	35%	🟡		
👁	Student, Alekhya ...	02/27/2020 10:31:...	1	3	0	0	21%	🟢		
👁	Student, Ana De...	03/02/2020 09:18:...	1	3	0	1	16%	🟢		🕵
👁	Student, Javan D...	02/28/2020 04:39:...	1	3	0	0	10%	🟢		
👁	Student, Mhe Pa...	03/16/2020 05:55:...	2	3	0	0	5%	🟢		

Proctorio Policy Settings
Frame Metrics

- The Proctorio behavior flags are controlled by the presets and can be modified here.

- Setting the weight of these flags determines how critical a particular behavior is in relation to the other flags.

- These settings can be changed any time, even after the exam is complete. Changing the weight of the flags will trigger an automatic re-grade of the suspicion levels for each student in the reports.

- This allows you to adjust things if you feel the report is raising too many students as highly suspicious. It could mean that your settings are too severe and need to be dialed back.

Navigating Away

Keystrokes

Copy & Paste

Browser Resize

Audio Levels

Head and Eye Movement

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Proctorio Policy Settings

Frame Metrics

- Selecting more lenient settings in the metrics Proctorio is tracking will impact the number of students that are flagged in the reports.

The severity of each metric sets the weight of a suspicious behavior in relation to the other behaviors. These metrics are calculated with each image. Each characteristic is derived for every image, regardless if the setting is enabled or not. The severity of these metrics can be changed at any time which will result in a re-calculation of the suspiciousness of a Proctorio proctored exam.

Navigating Away

Keystrokes

Copy & Paste

Browser Resize

Head and Eye Movement

Multi-Face

Leaving the Room

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Proctorio Policy Settings

Frame Metrics

- Because the settings were dialed down to be more lenient, only one student has been flagged in red for review, although there are some visual indicators that show that other students may need to be reviewed.

Proctorio Exam Results

		Name	Submission Time	Attempt	Score	Annotations	Abnormalities	Suspicion Level			
👁	🖼	Student, Andreav...	03/02/2020 04:27:...	1	1	2	0	69%	🔴	🗂	🚩
👁	🖼	Student, Vuk De...	03/02/2020 09:23:...	1	3	0	1	18%	🟢	📧	
👁	🖼	Student, Ana De...	03/02/2020 09:18:...	1	3	0	1	16%	🟢	📧	
👁	🖼	Student, Alekhya ...	02/27/2020 10:36:...	2	3	0	0	12%	🟢		
👁	🖼	Student, Alekhya ...	02/27/2020 10:31:...	1	3	0	0	9%	🟢		
👁	🖼	Student, Javan D...	02/28/2020 04:39:...	1	3	0	0	5%	🟢		

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Proctorio Policy Settings

Frame Metrics

- If the severity level is dialed up in the frame metrics, the reports will echo the changes.

- These levels can be adjusted at any time—before or after the exam was administered.

Navigating Away

Keystrokes

Copy & Paste

Browser Resize

Head and Eye Movement

Multi-Face

Leaving the Room

Proctorio Policy Settings

Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your exam from being copied or shared.

Click on each option to learn more.

- Force Full Screen
- Only One Screen
- Disable New Tabs
- Close Open Tabs
- Disable Printing
- Disable Clipboard
- Disable Extensions
- Block Downloads
- Clear Cache
- Disable Right Click
- Prevent Re-entry

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Full Screen Options

Full Screen Off

Lenient (30s)

Moderate (15s)

Severe (0s)

Full Screen Options allow you to force students to have the exam window in full screen mode and customize the severity of this action.

1. Lenient (30 seconds) - Allows students to be out of Full Screen for 30 seconds before being kicked out of the exam.
2. Moderate (15 seconds) - Allows students to be out of Full Screen for 15 seconds before being kicked out of the exam.
3. Severe (immediate) - Students are kicked out of the exam immediately upon exiting Full Screen. Students will receive a warning before being expelled from exam.

Lock Down Options   s during the exam, and prevents your e

Click on each optio

Force Full Scree   Disable Clipboard

Disable Extensio

COMPARISON OF PA

• Note: Students will receive a warning before being expelled from exam.

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✕

Full Screen Options

Full Screen Off

Lenient (30s)

Moderate (15s)

Severe (0s)

The force full screen setting creates an additional locked down aspect for the student. This setting will force the exam to be taken in a full screen mode.

Students won't be able to minimize the exam or navigate away or the exam will be immediately submitted, depending on settings. Full Screen Options allow you to force students to have the exam window in full screen mode and customize the severity of this action.

1. Lenient (30 seconds) - Allows students to be out of Full Screen for 30 seconds before being kicked out of the exam.
2. Moderate (15 seconds) - Allows students to be out of Full Screen for 15 seconds before being kicked out of the exam.
3. Severe (immediate) - Students are kicked out of the exam immediately upon exiting Full Screen. Students will receive a warning before being expelled from exam.

Lock Down Options   s during the exam,
and prevents your e

Click on each optio

Force Full Scree   Disable Clipboard

Disable Extensio

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• Note: Students will receive a warning before being expelled from exam.

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✕

Full Screen Options

Instructors can choose the level of severity within Force Full Screen. The settings determine how much time elapses between when a student exits full screen mode and when students are kicked out of the exam

Full Screen Options allow you to force students to have the exam window in full screen mode and customize the severity of this action.

1. Lenient (30 seconds) - Allows students to be out of Full Screen for 30 seconds before being kicked out of the exam.

2. Moderate (15 seconds) - Allows students to be out of Full Screen for 15 seconds before being kicked out of the exam.

3. Severe (immediate) - Students are kicked out of the exam immediately upon exiting Full Screen. Students will receive a warning before being expelled from exam.

Full Screen Off

Lenient (30s)

Moderate (15s)

Severe (0s)

Lock Down Options ... during the exam, and prevents your e...

Click on each optio...

Force Full Scree...

Disable Extensio...

Disable Clipboard

COMPARISON OF PA...

• Note: Students will receive a warning before being expelled from exam.

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Lock Down Options
and prevents your e

Click on each optio

Force Full Scree

Disable Extension

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Full Screen Options

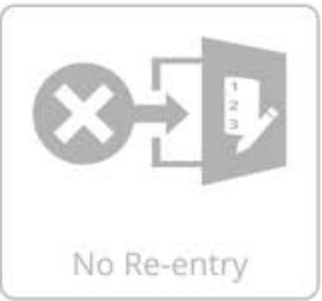**Full Screen Off**

Lenient (30s)

Moderate (15s)

?

Severe (0s)

The force full screen setting creates an additional locked down aspect for the student. This setting will force the exam to be taken in a full screen mode.

When paired with Only One Screen, Proctorio creates an effective preventive measure, ensuring students do not use outside resources on their computer during their exam.

The student will not be able to minimize the exam or navigate away from the exam page (e.g., use other programs) or the exam will be immediately submitted. The length of time before a student is removed from an exam can be adjusted to suit different test requirements.

There are three settings for Force Full Screen:
Full Screen Options allow you to force students to have the exam window in full screen mode and customize the severity of this action.

1. Lenient (30 seconds) - Allows students to be out of Full Screen for 30 seconds before being kicked out of the exam.
2. Moderate (15 seconds) - Allows students to be out of Full Screen for 15 seconds before being kicked out of the exam.
3. Severe (immediate) - Students are kicked out of the exam immediately upon exiting Full Screen. Students will receive a warning before being expelled from exam.

- Note: Students will receive a warning before being expelled from exam.

Disable Clipboard

s during the exam,

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Proctorio Policy Settings
Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your e...

Click on each optio...

| 1 |
| Only One Screen |

- Only One Screen prevents the test-taker from having multiple monitors.
- Proctorio will detect the presence of an extra monitor and require the test taker to disconnect it prior to starting the exam.

Force Full Screen   Only One Screen   Disable New Tabs   Close Open Tabs   Disable Printing   Disable Clipboard

Disable Extensions   Block Downloads   Clear Cache   Disable Right Click   Prevent Re-entry

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Lock Down Options   s during the exam,
and prevents your e

Click on each optio

Force Full Scree   Disable Clipboard

Disable Extensions   Block Downloads   Clear Cache   Disable Right Click   Prevent Re-entry

COMPARISON OF PACKAGES

✕

New Tab Options

Click on an option to see details

- This option disables the opening of new tabs during the exam.

- This prevents students from using other websites or resources to aid them in finishing their exams.

Tabs allowed

No New Tabs ?

In Quiz Links Only

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NAVIGATION MENU

✕

New Tab Options   **Click on an option to see details**

Lock Down Options
and prevents your e

Click on each optio

Tabs allowed

No New Tabs

In Quiz Links Only

- Selecting In Quiz Links Only allows students to access only links provided by the instructor within the quiz.

- This option allows you to send students to external websites to complete different parts of the exam.

Force Full Scree

Disable Clipboard

Disable Extensions   Block Downloads   Clear Cache   Disable Right Click   Prevent Re-entry

COMPARISON OF PACKAGES

javascript;

Proctorio Policy Settings

Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your e...

Click on each optio...
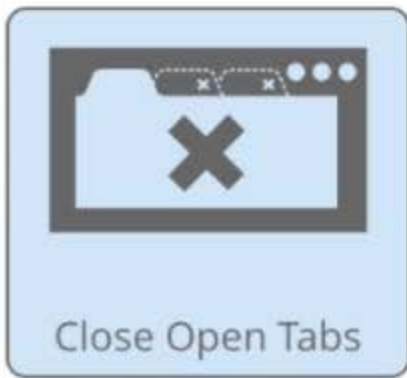
- This option closes all other open tabs at the start of the exam.

- This option is important because although other options prevent students from opening new browsers *during* the exam, this one ensures they don't have any open *prior* to the exam.

- If the test-taker has additional tabs open, they will be prompted to close the tabs before they can continue.

Close Open Tabs

Force Full Screen

Only One Screen

Disable New Tabs

Close Open Tabs

Disable Printing

Disable Clipboard

Disable Extensions

Block Downloads

Clear Cache

Disable Right Click

Prevent Re-entry

COMPARISON OF PACKAGES

Proctorio Policy Settings

Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your e...

Click on each optio...

Disable Printing

- This setting will prevent the student from printing the exam via keyboard shortcut or right-click and print.

- This also ensures students cannot share exam questions with other students or paste answers from outside sources.

Force Full Screen

Only One Screen

Disable New Tabs

Close Open Tabs

Disable Printing

Disable Clipboard

Disable Extensions

Block Downloads

Clear Cache

Disable Right Click

Prevent Re-entry

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Proctorio Policy Settings

Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your e...

Click on each optio...

✕

Disable Clipboard

• This setting will block the test-takers from using copy, cut and paste.

• This is a preventive measure to ensure test-takers cannot share exam questions or paste answers from outside sources.

Force Full Screen | Only One Screen | Disable New Tabs | Close Open Tabs | Disable Printing | Disable Clipboard

Disable Extensions | Block Downloads | Clear Cache | Disable Right Click | Prevent Re-entry

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Proctorio Policy Settings

Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your exam from being copied or shared.

Click on each option to learn more.

Force Full Screen   Disable Clipboard

✕

Disable Extensions

- Disable Extensions prevents students from using other Chrome browser extensions during the exam.

Disable Extensions   Block Downloads   Clear Cache   Disable Right Click   Prevent Re-entry

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Proctorio Policy Settings
Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your exam from being copied or shared.

Click on each option to learn more.

Force Full Screen

Disable Clipboard

Block Downloads

- The Block Downloads feature will prevent test-takers from downloading anything during the exam, including the exam itself and any files from websites or external sources.

- If the test-taker attempts to download anything, Proctorio will prevent the download from occurring and provide a warning to the student that the exam attempt has been suspended.

- The Proctorio reports in Connect will flag the exam attempt for a suspicious ending, and Proctorio will alert you that the exam attempt ended when the test-taker attempted to download the quiz page.

Disable Extension

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Proctorio Policy Settings
Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your exam from being copied or shared.

Click on each option to learn more.

Force Full Screen

Disable Clipboard

Clear Cache

- This setting removes all traces of the exam from the test-takers' computer after completion, including clearing any temporary files stored in the browser or hard-drive obtained during the exam.
- This feature prevents students from searching temporary internet files to replicate the exam.

Disable Extensions | Block Downloads | Clear Cache | Disable Right Click | Prevent Re-entry

COMPARISON OF PACKAGES

Proctorio Policy Settings
Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your exam from being copied or shared.

Click on each option to learn more.

Disable Right Click

- Disable Right Click prevents the student from right clicking within the exam window.
- This feature protects against accessing the print menu, page source, and developer tools via the mouse.

Force Full Screen

Disable Clipboard

Disable Extensions

Block Downloads

Clear Cache

Disable Right Click

Prevent Re-entry

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Proctorio Policy Settings

Lock Down Options

Lock Down Options   during the exam,
and prevents your e

Click on each optio   ×

Re-entry Options   ## Click on an option to see details

Allow Re-entry   ?

- This setting allows instructors to choose whether students may re-enter the exam, re-enter the exam with approval from Proctorio, or submit the exam in one sitting without exception.

Re-entry with Agent

- It may be enabled to prevent students from receiving potentially unauthorized help off camera while the remote proctor is not recording.

Force Full Scree   Disable Clipboard

No Re-entry

Disable Extensio

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Proctorio Policy Settings

Lock Down Options

Lock Down Options   during the exam,
and prevents your e

Click on each optio

Force Full Scree   Disable Clipboard

Re-entry Options   **Click on an option to see details**

✕

- "Re-entry with Agent" authorizes Proctorio's staff to allow students back into the exam.

Allow Re-entry

Re-entry with Agent

Disable Extensio

No Re-entry

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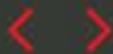
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Proctorio Policy Settings

Lock Down Options

Lock Down Options   during the exam,
and prevents your e

Click on each optio   Disable Clipboard

Re-entry Options   **Click on an option to see details**

Force Full Scree
- "No Re-entry" denies re-entry of the exam regardless of
  the reason.

Allow Re-entry

Disable Extensio

Re-entry with Agent

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No Re-entry

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Proctorio Policy Settings

Lock Down Options

Lock Down Options allow you to restrict browser activity, determine which resources your student can or cannot access during the exam, and prevents your exam from being

Click on each option to learn more.

OPTIONS	BASIC	PLUS
Browser Locking Options		
Force Full Screen Lenient	✓	✓
Force Full Screen Moderate		✓
Force Full Screen Severe		✓
Only One Screen	✓	✓
Disable New Tabs	✓	✓
In Quiz Links Only		✓
Close Open Tabs	✓	✓
Disable Printing	✓	✓
Disable Clipboard	✓	✓
Disable Extensions		✓
Block Downloads		✓
Clear Cache	✓	✓
Disable Right Click	✓	✓
Prevent Re-entry		✓
Re-entry with agent		✓

Learn More ›

Force Full Screen   Only One Screen   Close Open Tabs   Disable Printing   Disable Clipboard

Disable Extensions   Block Downloads   Clear Cache   Disable Right Click   Prevent Re-entry

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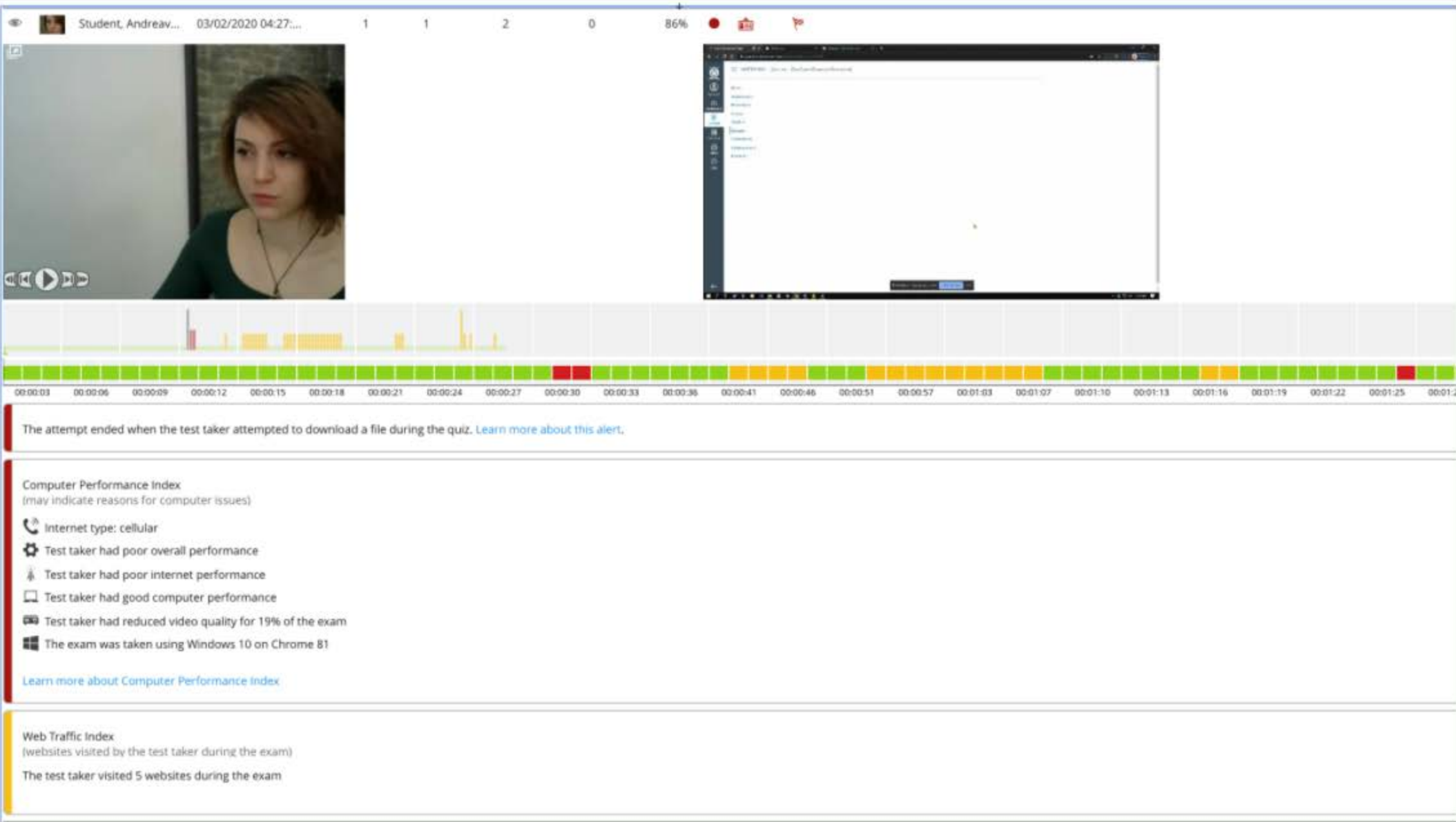
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Proctorio Policy Settings

Recording Options

• Recording options
• Artificial Intelligence

Click on each optio

Record Video

- Enabling the record video option will record the test-taker via webcam during the entire exam. Artificial intelligence monitoring will flag suspicious behaviors.

- The exam footage will be available to the professor after the exam has been completed and can be viewed in the Proctorio reports in Connect.

Record Video   Record Audio   Record Screen   Record Web Traffic   Record Room

COMPARISON OF PACKAGES

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Proctorio Policy Settings

Recording Options

• Recording options ...
• Artificial Intelligen...

Click on each optio...

×

Record Audio

Record audio enables the microphone on the student's device to pick up:

- Test-taker talking to others
- Others talking to test-taker
- Changes in ambient noise

Record Video   Record Audio   Record Screen   Record Web Traffic   Record Room

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Proctorio Policy Settings

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Record Screen

- The record screen option will take screenshots of the test-taker's entire desktop while they are within the exam.

- Recording the screen allows the professor to view exactly what the test-taker was seeing on their monitor. This could include other programs, websites, etc.

- Proctorio will take screenshots when the following are triggered:

  - Test-taker answers a question

  - Test-taker clicks the mouse

  - Test-taker copies/pastes values

  - Test-taker resizes their browser

  - Test-taker leaves the exam page

· Recording options
· Artificial Intelligen

Click on each optio

Record Video

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Record Web Traffic

- Records any web page visited during the exam.
- The URL of the website will be collected as well as a screenshot of the page that the test-taker is viewing and tracked in the incident log.

CLICK TO SEE INCIDENT LOG

Web Traffic Index
(websites visited by the test taker during the exam)

The test taker visited 5 websites during the exam

URL Visited	Elapsed Ti...
▶ 🔍 🟧 https://mars.nasa.gov/news/8419/more-testing-for-mars-i...	00:00:44
▶ 🔍 🟧 https://mars.nasa.gov/news/8419/more-testing-for-mars-i...	00:00:50
▶ 🔍 G https://www.google.com/search?q=nasa&rlz=1C1GCEU_e...	00:00:56
▶ 🔍 🔵 https://www.nasa.gov/	00:00:59
▶ 🔍 🔵 https://www.nasa.gov/press-release/explorers-wanted-na...	00:01:03

📄 EXPORT AS CSV

- In the reports, a log of the actual web pages visited by the student is provided after the exam.

• Recording options
• Artificial Intelligence

Click on each option

Record Video

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✕

Record Room Options # Click on an option to see details

Record Room Off

- Record Room prompts the student to show you their test environment during an exam to ensure there are not other people or resources in the room.

- A panorama of the room scan will be added to the Proctorio reports in Connect. Instructors may review the student's room scans by selecting the Room Scan button.

Scan at Start

Intelligent Scan

• Recording options
• Artificial Intelligen

Click on each optio

Record Video

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Browser chrome and navigation

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- Recording options
- Artificial Intelligenc

Click on each optio

Record Video

COMPARISON OF PA

Record Room Options — Click on an option to see details

- Scan at Start will ask the student to perform the Record Room scan once, at the beginning of the assessment.

Record Room Off

Scan at Start

Intelligent Scan

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• Recording options

• Artificial intelligenc

Click on each optio

Record Video

COMPARISON OF PA

Record Room Options Click on an option to see details

Record Room Off

Scan at Start

Intelligent Scan

- Intelligent Scan asks students to perform a Record Room scan at the beginning of the exam and at key intervals during the assessment
  Suspicious behavior will trigger additional room scans.

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Proctorio Policy Settings
Recording Options

• Recording options allow you to proctor the assessment experience by utilizing a variety of methods.
• Artificial intelligence picks up on student behavior.

Click on each option to learn more.

✕

Record Video   Record Audio   Record Room

OPTIONS	BASIC	PLUS
REMOTE PROCTORING		
Record Video	✓	✓
Record Audio		✓
Record Screen		✓
Record Web Traffic		✓
Record Room		✓
Live Proctoring	Premium Upgrade Option	

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Reports

Basic Reports

The Basic, free report will show when the students submitted the exams and how many attempts they used.

🙎 Proctorio Gradebook   ⚙ Proctorio Settings   📍 Proctorio Map   ≡ Display Options   ⬚ Export Options

Proctorio Exam Results

		Name	Submission Time	Attempt
👁		Student, Andreav...	03/02/2020 04:27:...	1
👁		Student, Vuk De...	03/02/2020 09:23:...	1
👁		Student, Alekhya ...	02/27/2020 10:36:...	2
👁		Student, Alekhya ...	02/27/2020 10:31:...	1
👁		Student, Ana De...	03/02/2020 09:18:...	1
👁		Student, Javan D...	02/28/2020 04:39:...	1
👁		Student, Mhe Pa...	03/16/2020 05:55:...	2

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Reports

Basic Reports

• If you click into the individual student and select the globe icon on the right, you will be able to see the individual student's IP address to see where they are taking the exam from.

• This could help you identify if it is actually the student taking the exam or if they may be having someone else take the exam for them.

• The video will also be available to show the student's image as they are taking the exam in case it's needed to provide in cases of academic integrity concerns.

👤 Proctorio Gradebook | ⚙ Proctorio Settings | 📍 Proctorio Map | ☰ Display Options | ⬚ Export Options

Proctorio Exam Results

		Name	Submission Time	Attempt
👁		Student, Andreav Demo	03/02/2020 04:27:31 am	1
👁		Student, Vuk Demo	03/02/2020 09:23:19 am	1

Uvca Овча

Belgrade, Belgrade, N/A   Metro code: N/A   TELEKOM SRBIJA a.d.

Serbia   Radius: 12 [mi]   cellular internet

(44.8166, 20.4721)   Timezone: Europe/Belgrade   212.200.160.0

Danube

| 00:00:03 | 00:00:06 | 00:00:09 | 00:00:12 | 00:00:15 | 00:00:18 | 00:00:21 | 00:00:24 | 00:00:27 | 00:00:30 | 00:00:33 | 00:00:36 | 00:00:39 | 00:00:42 | 00:00:45 |

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Reports
Plus Reports

- The Reports in the Plus version will show, at a glance, which students are suspicious because of their behaviors.
- The colors indicate the level of concern – red being the most concerning and green being the least.
- Depending on the instructor settings, there are also icons that will show if there are suspicious activities from the students.
- Clicking on an individual student from the report will allow you to drill down to the details of the student's exam experience.

Proctorio Exam Results

		Name	Submission Time	Attempt	Score	Annotations	Abnormalities	Suspicion Level			
👁		Student, Andreav...	03/02/2020 04:27:...	1	1	2	0	86%	🔴	🗄	🚩
👁		Student, Vuk De...	03/02/2020 09:23:...	1	3	0	1	39%	🟡		👮
👁		Student, Alekhya ...	02/27/2020 10:36:...	2	3	0	0	35%	🟡		
👁		Student, Alekhya ...	02/27/2020 10:31:...	1	3	0	0	21%	🟢		
👁		Student, Ana De...	03/02/2020 09:18:...	1	3	0	1	16%	🟢		👮
👁		Student, Javan D...	02/28/2020 04:39:...	1	3	0	0	10%	🟢		
👁		Student, Mhe Pa...	03/16/2020 05:55:...	2	3	0	0	5%	🟢		

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Reports

Plus Reports

• This test taker was denoted as yellow in the reports—a medium suspicion level– based on the instructor's settings.

• The log shows that he was flagged because he had poor video quality and internet connection for part of the exam and that another user took the exam from the same connection at the same time.

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Reports

Plus Reports

Student, Vuk De...   03/02/2020 09:23:...   1   3

• Clicking into the progress bar, allows you to skip to parts of the video that are flagged to see what the student was doing.
• In this case, it appears he is not looking directly at the exam screen.

00:00:02   00:00:04   00:00:06   00:00:07   00:00:09   00:00:11   00:00:13   00:00:15

Reports

Plus Reports

- This test taker was denoted at a high level of suspicion based on the instructor settings.
- This student was flagged for a number of reasons including a spotty internet connection, the fact that she visited 5 other websites during the exam, and that she attempted to download a file during the exam.

Reports

Plus Reports

- By clicking into this students' progress bar, we can see she accessed another webpage by the image shown.

- We can see she accessed another web page by the image shown from her screen recording.

The attempt ended when the test taker attempted to download a file during the quiz. Learn more about this alert

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Reports

Plus Reports

Scrolling down, we can see the actual websites she visited at the exact times.

Test taker had reduced video quality for 19% of the exam

The exam was taken using Windows 10 on Chrome 81

Learn more about Computer Performance Index

Web Traffic Index
(websites visited by the test taker during the exam)

The test taker visited 5 websites during the exam

URL Visited	Elapsed Ti...
▶ ⚲ 🖼 https://mars.nasa.gov/news/8419/more-testing-for-mars-i...	00:00:44
▶ ⚲ 🖼 https://mars.nasa.gov/news/8419/more-testing-for-mars-i...	00:00:50
▶ ⚲ G https://www.google.com/search?q=nasa&rlz=1C1GCEU_e...	00:00:56
▶ ⚲ ⬤ https://www.nasa.gov/	00:00:59
▶ ⚲ ⬤ https://www.nasa.gov/press-release/explorers-wanted-na...	00:01:03

📄 EXPORT AS CSV

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NAVIGATION MENU

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Reports
Plus Reports

For Plus-level customers, all Report data can be exported for your own records or to supply to your administration if academic integrity issues should occur.

👤 Proctorio Gradebook | ⚙ Proctorio Settings | 📍 Proctorio Map | ☰ Display Options | ⤤ Export Options

Gradebook PDF Report

Download the Gradebook information for all test takers in PDF format.

Include the following sections:

Exam Information   [toggle]

Proctorio Exam Settings   [toggle]

Proctorio Behavior
Settings   [toggle]

Test taker Results   [toggle]

Attendance Report   [toggle]

Generate PDF

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Proctorio Policy Settings
Technical Abnormalities

Technical Abnormalities compare one student's actions to their peers on the exam. This will highlight statistically significant differences in a student's behavior as it relates to any potential data manipulation of exam time and exam collusion with their peers.

Click on each option to learn more.

Exam Duration	Start Times	End Times	Exam Collusion

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Proctorio Policy Settings

Technical Abnormalities

✕

Technical Abnormal... a student's behavio...

Click on each optio...
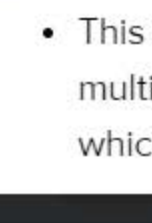
⏱ **Exam Duration**

- This will alert the professor when the student has taken significantly more or less time to complete the exam compared to the other students.

- A longer-than-average timeframe could indicate that the student is struggling with the exam, where an abnormally short timeframe could indicate that a student had the answers beforehand.

- This could also indicate that the student entered the exam multiple times and that there was a technical issue or an incident which ended the prior attempt.

Exam Duration   Start Times   End Times   Exam Collusion

M Proctorio on Connect | McGraw H. ✕ +

🔒 mheducation.com/highered/connect/proctorio/click-demo.html

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Proctorio Policy Settings
Technical Abnormalities

Technical Abnormal... ...icant differences in a student's behavio...

Click on each optio...

✕

Start Times

- When receiving the results from the Connect reports, Proctorio checks the start and end time for each exam against the Connect assignment start and end time.

- This abnormality will alert the professor when the Proctorio time does not match the Connect exam times, potentially because of loss of connection or attempted circumvention of the proctoring process.

Exam Duration   Start Times   End Times   Exam Collusion

Proctorio Policy Settings
Technical Abnormalities

Technical Abnormal... ...cant differences in
a student's behavio...

Click on each optio...

- When receiving the results from the Connect reports, Proctorio checks the start and end time for each exam against the Connect assignment start and end time.

- This abnormality will alert the professor when the Proctorio time does not match the Connect exam times, potentially because of loss of connection or attempted circumvention of the proctoring process.

End Times

Exam Duration   Start Times   End Times   Exam Collusion

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Proctorio Policy Settings ✕

Technical Abnormal... a student's behavio...

Click on each optio...

Exam Collusion

- This will alert the professor when multiple students take the exam at the same time on the same internet connection. This could indicate that students were working together while taking the exam.

- This should be enabled when all online exams are being taken during the same exam time window, unless the exams are being taken at the same time in the same location (ex. simultaneously in person).

- A red collusion icon in exam attempt rows will indicate when multiple students took the same exam, on the same IP address, within 15 minutes of each other. Other options like Record Video or Room Scan can help determine if students were working together.

Exam Duration   Start Times   End Times   Exam Collusion

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Proctorio Policy Settings

Verification Options

Verification options both have the student confirm their identity as well as confirm that their equipment is able to effectively proctor the exam.

Click on each option to learn more.

| Verify Video | Verify Audio | Verify Desktop | Verify ID | Verify Signature | Live Proctor |

COMPARISON OF PACKAGES

Proctorio Policy Settings

Verification Options

Verification options ... ively proctor the exam.

Click on each option ...

Verify Video

- The verify video setting creates an additional pre-exam check for the test-taker to ensure the webcam is working properly and the face can be recognized in the feed.

- Proctorio will run facial recognition on 5 photos taken during the system check.

- This step eliminates false positives that could create a high suspicion rate in the Proctorio reports or prevent the video from being viewed by the system.

Verify Video   Verify Audio   Verify Desktop   Verify ID   Verify Signature   Live Proctor
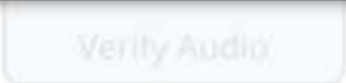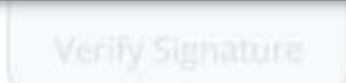
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Proctorio Policy Settings

Verification Options

Verification options both have the student confirm their identity as well as confirm that their equipment is able to effectively proctor the exam.

Click on each option

Verify Audio

- The verify audio setting creates an additional pre-exam check for the test-taker.

- This check will generate an audio sample of the white noise of the room as well as the test taker's talking level to prevent false positives and ensure the system can pick up the audio clearly.

Verify Video   Verify Audio   Verify Desktop   Verify ID   Verify Signature   Live Proctor

COMPARISON OF PACKAGES

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Proctorio Policy Settings

Verification Options

Verification options both have the student confirm their identity as well as confirm that their equipment is able to effectively proctor the exam.

Click on each option

×

Verify Desktop

- The verify desktop setting creates an additional check during the system diagnostic test to ensure the student's screen recording is functioning properly.

- By enabling this option, the student must correct the issue via the help center or support before entering the exam.

Verify Video   Verify Audio   Verify Desktop   Verify ID   Verify Signature   Live Proctor

COMPARISON OF PACKAGES

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NAVIGATION

Verification Type

Click on an option to see details

*Note: Selecting Verify ID will require the test taker to use a webcam.

Verification of   proctor the
exam.

Click on each

ID Not Required

Auto ID Check

Live ID Check

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NAVIGATION

Verification Type

ID Not Required

Auto ID Check ❓

Live ID Check

Click on an option to see details

- Automatic ID Check* - Requires test takers to hold their ID cards up to the webcam and an image is displayed in the Proctorio Gradebook.

- The form of ID is evaluated by software and flagged for irregularities.

*Note: Selecting Verify ID will require the test taker to use a webcam.

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exam.

Click on each...

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Verification Type

ID Not Required

Auto ID Check

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Live ID Check

Click on an option to see details

- Live ID Check is a premium option for certain titles.

- It requires test takers to hold up their ID cards to the webcam and is verified by a Proctorio customer support agent in real-time.

- This feature costs an additional $20 per student per course on top of the $15 price of Plus and is only available for select quantitative business disciplines.

- The agent compares the information on the ID to the name and live image of the test taker for authentication.

- Any discrepancies are immediately addressed and the test takers may be prevented from entering an exam without proper identification.

*Note: Selecting Verify ID will require the test taker to use a webcam.

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NAVIGATION

Verification o   roctor the
exam.

Click on each

Verify

COMPARISON

Verification Type

Click on an option to see details

ID Not Required

Auto ID Check

Live ID Check

- Enabling the Verify ID* option will require the test taker to hold up his or her ID card to the camera during the exam pre-checks in order to be photographed. The image can be seen in the Proctorio reports in Connect.

- Proctorio uses machine learning to scan and automatically detect ID cards, such as driver's licenses and test taker's IDs. When Proctorio detects an ID, it will automatically capture the image and display it in the Proctorio reports in Connect.

- Proctorio will automatically highlight ID cards that are suspicious. This could include IDs that are blurry, damaged, or of an unrecognized format. These IDs will be shown with a red ID icon.

CLICK TO SEE INCIDENT LOG

*Note: Selecting Verify ID will require the test taker to use a webcam.

ve Proctor

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exam.

Click on each...

Verify...   ...ve Proctor

COMPARISON...

Verification Type   # Click on an option to see details

ID Not Required

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CLICK TO SEE INCIDENT LOG

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NAVIGATION MENU

Proctorio Policy Settings

Verification Options

Verification options both have the student confirm their identity as well as confirm that their equipment is able to effectively proctor the exam.

Click on each option

×

Verify Signature

- Verify Signature is an added feature for actively confirming a test-takers' commitment to academic integrity prior to an exam.

- With Verify Signature, instructors are able to require test-takers to positively affirm their understanding and acceptance of institutional expectations for academic integrity.

Verify Video   Verify Audio   Verify Desktop   Verify ID   Verify Signature   Live Proctor

COMPARISON OF PACKAGES

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Proctorio Policy Settings

Verification Options

Verification options both have the student confirm their identity as well as confirm that their equipment is able to effectively proctor the exam.

Click on each option

✕

Live Proctor

- Live Proctor is a Premium option available for select titles.
- A live agent will watch the student take the exam and monitor exam behavior, flagging and making notations about suspicious behavior.
- No advanced scheduling is required.

Verify Video   Verify Audio   Verify Desktop   Verify ID   Verify Signature   Live Proctor

COMPARISON OF PACKAGES

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Proctorio Policy Settings

Verification Options

Verification options both have the student confirm their identity as well as confirm that their equipment is able to effectively proctor the exam.

Click on each option to learn more.
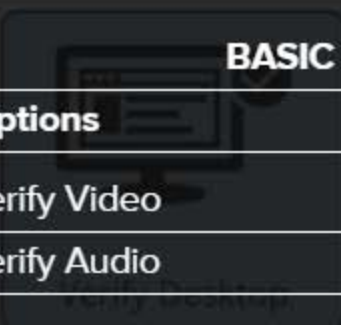
Verify Video   Verify Signature   Live Proctor

OPTIONS	BASIC	PLUS
Verification Options		
Verify Video		✓
Verify Audio		✓
Verify Desktop		✓
Verify Identity		✓
Verify Signature		✓
Live ID Check		Premium Upgrade Option

Learn More >

COMPARISON OF PACKAGES

Proctorio v Linkletter

Pinos, Timothy <tpinos@cassels.com>

Wed 9/2/2020 2:22 PM

Eye File

To:Linkletter, Ian <ian.linkletter@ubc.ca>;

Cc:Hellrung, Layne <lhellrung@cassels.com>;

This is Exhibit BT referred to in the Affidavit of Ian Linkletter affirmed before me on 15 Oct 2020.

A Commissioner for taking Affidavits for British Columbia

📎 4 attachments (8 MB)

2020-09-02 12-36.pdf; Notice of Civil Claim dated Aug. 31, 2020.PDF; Notice of Application dated Aug. 31, 2020.PDF; Affidavit #1 of J. DeVoy (witnessed remotely).PDF;

Mr. Linkletter:

We are counsel to Proctorio Inc.

Please find enclosed an injunction order which was issued against you in the British Columbia Supreme Court earlier today.

Please comply with this order. In particular, you will need to take down the screen shot of the Proctorio Academy course material in your August 29 Tweet. Further we would ask that you remove the links to and references to the 7 Help Center videos which you tweeted on August 23 and 24.

I also enclose copies of the Notice of Civil Claim, the Notice of Application, and the Affidavit of John Devoy which were used on the application this morning.

Cassels | **TIMOTHY PINOS**
t: +1 416 869 5784
e: tpinos@cassels.com

Cassels Brock & Blackwell LLP | cassels.com
Suite 2100, Scotia Plaza, 40 King St. W.
Toronto, ON M5H 3C2 Canada

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From:	Pinos, Timothy
To:	Joe Arvay
Cc:	Sally Yee
Subject:	RE: Proctorio v Linkletter
Date:	Wednesday, September 9, 2020 2:19:43 PM
Attachments:	image001.png

Joe: Nice to hear from you. I am happy for you to take reasonable time you to get up to speed. The only matter currently outstanding with Mr. Linkletter and the injunction is my request that he take down the screen shot of the Proctorio Academy, which when I last looked was still up. I will forward my email regarding this.

Perhaps when you are briefed a good start would be to have a call to discuss. I am generally around, though working from home.

Yes, I am in Toronto, but am called in BC too. If you could copy Layne Hellrung, my colleague in our Vancouver office, on correspondence.

Cheers

Tim

Cassels | **TIMOTHY PINOS**
t: +1 416 869 5784
e: tpinos@cassels.com

Cassels Brock & Blackwell LLP | cassels.com
Suite 2100, Scotia Plaza, 40 King St. W.
Toronto, ON M5H 3C2 Canada

This is Exhibit BU referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

A Commissioner for taking Affidavits for
British Columbia

From: Joe Arvay <jarvay@arvayfinlay.ca>
Sent: Wednesday, September 09, 2020 2:19 PM
To: Pinos, Timothy <tpinos@cassels.com>
Cc: Sally Yee <syee@arvayfinlay.ca>
Subject: Proctorio v Linkletter

Mr. Pinos I have just been retained by Mr. Linkletter in the above noted matter. I will obviously need to time to take instructions. I assume that since you now have an interim injunction in place that you will not be pressing me for a response but if I am wrong about that please let me know. I see from the website that you are in the Toronto office. Is that still the case?.....In any event this looks like an interesting case and look forward to a cordial relationship.

Joe

This message, including any attachments, is privileged and may contain confidential

File No: 20471

11 September 2020

VIA EMAIL

Cassels Brock & Blackwell LLP
Suite 2100, Scotia Plaza
40 King Street West
Toronto ON M5H 3C2

Attention: Timothy Pinos

Dear Mr. Pinos:

Re: *Proctorio, Incorporated v. Linkletter*
         SCBC Vancouver Registry No. S208730

We represent Ian Linkletter, the defendant in this action.

I have your email of September 9, 2020 and your email to my client of September 2, 2020 in which you ask him to remove certain tweets he made on August 23, 24, and 29, 2020. In your emails you refer to the *ex parte* order obtained September 2 that restrains Mr. Linkletter "from downloading, disseminating, copying, recording, posting, transferring, or sharing" four categories of information.

We have serious doubts about the scope of this order, including whether it requires the deletion of anything previously posted, and whether it captures the contents of the screenshots in the tweets referred to. However, in the interest of avoiding costly litigation on this point, we have advised our client to delete these tweets which we understand he has done.. While these deletions are done on a <u>without prejudice</u> basis to our defence to the claim or the injunction, we do however intend to rely on your emails and this response to be <u>with prejudice</u> in our defence to the claim or the injunction.

Yours truly,

ARVAY FINLAY LLP

Per:

Joseph J. Arvay, Q.C.
jarvay@arvayfinlay.ca
Direct 604.283.9018

JJA/JT/sy

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No. S208730
Vancouver Registry

IN THE SUPREME COURT OF BRITISH COLUMBIA
(BEFORE THE HONOURABLE MR. JUSTICE GIASCHI)

Vancouver, BC
September 2, 2020

BETWEEN:

PROCTORIO, INCORPORATED

Applicant

AND:

IAN LINKLETTER

Respondent

PROCEEDINGS IN CHAMBERS

COPY

This is Exhibit BW referred to in the
Affidavit of Ian Linkletter affirmed
before me on 15 Oct 2020.

A Commissioner for taking Affidavits for
British Columbia

No. S208730
Vancouver Registry

IN THE SUPREME COURT OF BRITISH COLUMBIA
(BEFORE THE HONOURABLE MR. JUSTICE GIASCHI)

Vancouver, BC
September 2, 2020

BETWEEN:

PROCTORIO, INCORPORATED

Applicant

AND:

IAN LINKLETTER

Respondent

_____

PROCEEDINGS IN CHAMBERS
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Counsel for the Applicant: T. Pinos
                                              L. Hellrung

PROCEEDINGS IN CHAMBERS
SEPTEMBER 2, 2020

PROCEEDINGS

EXHIBITS

1
Submissions by Mr. Pinos

(PROCEEDINGS COMMENCED AT 10:21 A.M.)

THE CLERK: Calling the next matter on the list My
    Lord number 4 for 30 minutes, Proctorio
    incorporated versus Linkletter.
MR. PINOS: Good morning, My Lord. My name is Timothy
    Pinos, P-i-n-o-s, and I have with me Mr. Layne
    Hellrung, H-e-l-l-r-u-n-g. This is a without
    notice application for an adjournment or
    interlocutory injunction against the defendant,
    Ian Linkletter, to [indiscernible] him from
    infringing the copyright of the plaintiff and
    otherwise breaching protection measures to online
    material, ie, publishing them on Twitter and via
    the social media.
         You should have in front of you the
    application record binder containing the notice
    of application. The affidavit of John Devoy,
    D-e-v-o-y, the notice of civil claim and a draft
    order which was submitted for vetting and I
    believe has been vetted by the registrar.
         I'd like to just briefly review the facts.
    The material is moderately -- it's not terribly
    voluminous and the facts in this case are pretty
    straightforward.
THE COURT: Okay. Yes, please. Counsel, please take
    me through it. This is a late addition to the
    list.
MR. PINOS: Okay.
THE COURT: I have not had any opportunity to review
    it whatsoever so --
MR. PINOS: I'm happy to give you the more complete
    summary but I think it will be more efficient
    than walking through the affidavit page by page.
THE COURT: Well ...
MR. PINOS: My client, Proctorio, has developed
    software for online proctoring or invigilation of
    exams and assessments. What the software does is
    it sits beside the software of the university or
    college administering the examination on line to
    the student and basically tracks what's going on
    in the computer in terms of web pages access and
    get things done and also uses the microfilm and
    camera of the computer of the student to monitor

2
Submissions by Mr. Pinos

```
 1          what's going on.  So it replaces the kind of
 2          vigilator who would sit in front of the room
 3          while you were writing an exam in an exam hall in
 4          a university or college.
 5               The university defines how it wants to use
 6          the software in terms of whether they want the
 7          software to monitor the microphone camera, the
 8          computer activities or all of them, and
 9          determines the extent to which the software
10          records some or all of the activity for each to
11          review by the instructor or institution and the
12          software can be set to flag certain conduct such
13          as the presence of a second person in the room,
14          accessing emails, accessing their websites
15          forwarded by the institution.  So my client is
16          the facilitator for proctoring record and all
17          stages.  It's up to the university to do with the
18          record of that invigilation as it sees fit in the
19          circumstances.  And my client -- one of my
20          client's -- Canadian clients is the University of
21          British Columbia and this is -- this relates to
22          an employee at the University of British
23          Columbia.
24               The defendant is employed by the university
25          as an educational technologist or learning
26          assistant.  And by virtue of his position at the
27          university he has access to my client's software
28          in that case.
29               This injunction application doesn't relate
30          to the software per se but rather relates to the
31          support and training material that my client
32          makes available to its university and college
33          clients as part of the licensee of the software,
34          and those are referred to in the affidavit of
35          Mr. Devoy as the help centre and the Proctorio
36          academy.
37               The help centre contains a number of web
38          pages which include various embedded videos that
39          illustrate the functionality of the software and
40          provide information to administrators and
41          instructors on how to use and configure the
42          software.
43               The help centre is -- the sections of the
44          help centre we're concerned about are accessible
45          only to administrators and instructors.  There is
46          a separate help section for students to assist
47          them in using the software, but the -- as
```

3
Submissions by Mr. Pinos

1   sections of the help centre which are available
2   to the university administrators and instructors,
3   disclosed functionality of the software, the
4   approach of Proctorio's programming the software,
5   and how it can be used, all of which our client
6   regards as is confidential and proprietary
7   information. And it created the information.
8   It's Proctorio's information.
9   The other area of concern is what's called
10   the Proctorio academy. This is a companion to
11   the help centre which actually offers interactive
12   courses in how to configure and use the software
13   for administrators and instructors, and they can
14   use this in addition to or as an alternative to
15   the reference material on the help centre. And,
16   likewise, the Proctorio academy material, which
17   also includes videos, is considered to be
18   [indiscernible] confidential information of my
19   client.
20   In the case -- we'll be getting to this
21   later with respect to [indiscernible] ownership
22   with respect to information, the material on the
23   help centre was actually developed by my client's
24   employees in their ordinary course of employment
25   and, therefore, is the property of Proctorio.
26   The academy material was produced by the contract
27   of Proctorio but by contract is owned by
28   Proctorio.
29   And last but not least, users of the academy
30   are explicitly required to agree to terms of use
31   for which the user is required to agree to before
32   accessing, which includes a prohibition on
33   republication or redissemination of the academy
34   material.
35   In the case of each of the help centre and
36   the academy, the matter -- Proctorio has
37   technological protections in place that ensure
38   only qualified administrators and instructors of
39   licensed institutions can access the help centre
40   material and the academy course material and they
41   are not available to students or other members of
42   the public.
43   So what has the defendant done here. The
44   defendant has a Twitter account in which he has,
45   over the last couple of months, began publishing
46   comments and criticisms of online proctoring
47   companies including my client. My client has no

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Submissions by Mr. Pinos

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 1          problem with that and is not taking action with
 2          respect to any of those or seeking an order with
 3          respect to his expression of his opinion with
 4          respect to the efficacy or appropriateness of
 5          online Proctorio software.  And in fact
 6          [indiscernible] says that Proctorio welcomes
 7          comments and criticisms as part of its efforts to
 8          continue to improve the software.
 9                What my client complains about, and this is
10          set out in the -- summarized in the affidavit of
11          Mr. Devoy at paragraph 33 --
12 THE COURT:  Just a second.
13 MR. PINOS:   -- is that --
14 THE COURT:  Just a second.
15 MR. PINOS:  Yeah.  And 32 is a good place to start.
16 THE COURT:  Yes.
17 MR. PINOS:  Yes.  So commencing on August 23rd last
18          week, Mr. Linkletter began posting links to
19          videos which form part of the help centre and
20          which are restricted to instructors.  And those
21          videos are hosted on YouTube but are not
22          otherwise accessible or searchable by members of
23          the public and they can only be reached by a link
24          that my client has control over and which they
25          manage the video in the help centre page.
26                And at paragraph 33 there's a list of seven
27          videos which Mr. Linkletter posted links to on
28          Twitter and which are embedded in the help centre
29          application documentation.  Exhibit D is a
30          printout of his full Twitter feed from mid August
31          to last Sunday, that covers it.
32                My client monitors social media discussion
33          of his software and became aware of
34          Mr. Linkletter's publication of these links.  It
35          responded to them by deactivating the links, in
36          other words, moving the relevant video to
37          somewhere else that was not accessed by the link
38          and in order to prevent members of the public
39          reading Mr. Linkletter's Twitter account but
40          accessing those videos.  He then subsequently
41          created new links to those videos and then
42          reattached them to the help centre documentation
43          and the academy course materials so they could
44          still be used by authorized licensees and
45          qualified administrators and instructors.
46 THE COURT:  The idea being the links that he published
47          would no longer work.
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Submissions by Mr. Pinos

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 1    MR. PINOS:  Yeah.  The links he published no longer
 2         work.
 3    THE COURT:  Right.
 4    MR. PINOS:  But because he has -- in the --
 5         educational technologist at UBC had employed at
 6         UBC he has access to the Proctorio help pages and
 7         so would have access to the reinvented videos if
 8         he so chose as an employee of UBC in the
 9         educational field.
10             And then at paragraph 34 we produce a number
11         of comments that Mr. Linkletter Tweeted in which
12         he acknowledges where he got the video from, the
13         help documentation page, from the instructor help
14         documentation along with highly critical remarks
15         about Proctorio and includes a suggestion that it
16         would be a good thing for someone to locate the
17         source code of Proctorio software and share it,
18         and he talks about deleting the company.
19             So Mr. Devoy deposes he became aware of
20         those Tweets and took the steps I have just
21         described to deactivate the links and then
22         attached them to new links so that they can still
23         be used by institutions including UBC and
24         qualified administrators of instructors.
25             The second thing he did is pick up a page
26         paragraph 42 of the Devoy affidavit.  On August
27         29, Mr. Linkletter posted a screen shot from the
28         academy course material, so this isn't the link.
29         This is actually a picture of a screen in the
30         academy course material which describes certain
31         functionality of aspects of the software.  And as
32         Mr. Devoy indicates this is forbidden by the
33         terms of service you have to consent to to be
34         able to get into the academy course material.
35         And Mr. Devoy went and opposed to the fact that
36         given his conduct in continuing to post the links
37         and this material, even though he knows that
38         Proctorio has found out about them and
39         deactivated the links, he just goes on and posts
40         new ones, the anticipation or apprehension on the
41         part of my client that he may continue to do this
42         as part of his --
43    THE COURT:  Sorry, on Exhibit D, which part of Exhibit
44         D is the screen shot?  There's multiple pages
45         here.
46    MR. PINOS:  It is -- I'll find it for you in.
47    MR. HELLRUNG:  My Lord, it's Mr. Hellrung.  At Exhibit
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6
Submissions by Mr. Pinos

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 1          D it's page 22 and then it goes over to the top
 2          at 23.  That's of the actual record.
 3   THE COURT:  Just one minute here.
 4   MR. PINOS:  Yeah.  If you look right at the bottom of
 5          page 22 which is page 1 of 7 of the actual
 6          Twitter printout you'll see entry of August 29
 7          where Mr. Linkletter "all of us have to demand
 8          transparency.  How exactly does this non-magical
 9          software work?  Why is Proctorio hide this
10          information.  Their own course" -- capitalized --
11          "on how Proctorio works was censored this week
12          after I shared some of the videos," and then
13          there's a screen shot of it there showing text of
14          some blank video pages.
15   THE COURT:  Okay.  It's not a very good -- all right.
16   MR. PINOS:  So that's the -- those are the essential
17          facts and Mr. Devoy also makes it clear that --
18          deposed to the fact that the material on the
19          [indiscernible] and in the academy are restricted
20          and not available to the public.
21               So the order we're seeking against
22          Mr. Linkletter is an order restraining the
23          disclosure of the health centre or the academy
24          course material or facilitating unauthorized
25          access to that material.  We're not seeking to
26          restrain anything he's saying or otherwise doing
27          and I've said my client has, you know, no
28          intention to try and muzzle him, and none of this
29          publication of this material is necessary for his
30          criticisms of my client which have continued
31          unabated before and after the publication of this
32          information.
33               So passing -- and I'll be coming back to a
34          couple of the facts as I talk about the legal
35          test.  As Your Lordship knows the test for an
36          injunction is whether there is a serious or
37          [indiscernible] to be tried and whether there's
38          irreparable harm and what the balance of
39          convenience is.  Looking at those factors as a
40          whole to determine whether it is just and
41          convenient to grant an injunction of the *Law and
42          Equity Act*.
43               In terms of the issue to be tried, the first
44          issue is copyright infringement and the essential
45          elements are ownership of the copy right and the
46          infringement doing something with the copyrighted
47          material that only the owner has the right to do.
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Submissions by Mr. Pinos

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 1          And in the notice of application we indicate that
 2          under the Copyright Act the rights of an owner of
 3          copyright include the right to reproduce or
 4          publish, that would apply to the screen shot, but
 5          also the making available right which is a fairly
 6          new right from a statutory standpoint, but
 7          basically takes account modern technology and the
 8          whole notice of linkages that providing a link to
 9          copyright is material without the authorization
10          of the owner of that copyright is also an
11          infringement of copy right, so that's the first
12          issue to be tried.
13               The second issue is a separate set of
14          provisions in the Copyright Act that makes it an
15          offence under the Copyright Act to circumvent
16          technological protection applied to copyrighted
17          material.  And as Mr. Devoy describes both the
18          help centre and the academy course material are
19          protected by measures that use the linkage
20          between my client's software and the university
21          or college's own educational platform to be able
22          to know who's accessing help centre material, to
23          be able to direct them to either the students
24          that are -- or the administrator instructor's
25          section of the help centre, and regulate access
26          that way.  And by effectively going behind the
27          vetted videos, copying the links to the
28          non-published YouTube videos, were restored.
29          Mr. Linkletter has circumvented the technological
30          protections which my client applied to ensure
31          that only authorized persons get to see the
32          videos about the functionality and configuration
33          of the software.
34               And the last but not least is that the third
35          issue is confidential information.  My clients
36          treat all of this functionality information as
37          confidential, treat it as confidential, it's
38          protected by the technological protection
39          measures and the confidentiality of the material
40          is emphasized in both the agreements with the
41          [indiscernible] institutions, in this case UBC,
42          and in the terms of use applied to the academy
43          course material which Mr. Linkletter would have
44          had to agreed to before he could get in and take
45          those screen shots.
46               With respect to irreparable harm, My Lord,
47          the reference of Mr. Devoy in this regard is
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Submissions by Mr. Pinos

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 1          detailed and specific.  There's irreparable harm
 2          from the public -- making available to the public
 3          of this information on a number estate fronts.
 4               The first estate front is with respect to
 5          the use of the software itself.  Mr. Devoy
 6          deposes that if the manner in which the software
 7          is configured how the software works and looks
 8          for conduct which may or may not exhibit signs of
 9          inappropriateness for an exam-taker, whether it's
10          extra or assistance or looking at unauthorized
11          sources, et cetera.  The disclosure of the
12          specifics of that functionality and how the
13          software gets configured could enable students to
14          "game" the software and adjust their behaviour to
15          avoid that functionality in the circumstances.
16               The secondary of irreparable harm -- and
17          that would devalue the effectiveness of the
18          software and if that -- the valuation became
19          known -- it became known throughout the client
20          base would reduce the value of the software to
21          the institutions and its attractiveness is the
22          original proposition for my client.  So that's
23          one very specific aspect of harm.
24               The other aspect of harm relates to
25          competitors.  Mr. Devoy deposes to the fact that
26          although this is a relatively new market area it
27          has grown significantly over the last ten years
28          and obviously with the pandemic and explosion of
29          online learning is increasing by leaps and
30          bounds.  And the, you know, like in any other
31          area, competitors try to copy each other's
32          features.  But they actually know what those
33          features are in order to copy them and describing
34          the functionality of the Proctorio software with
35          respect to, for example, how it tracks what the
36          student is doing in terms of physical movements
37          during an exam, how attracts what students are
38          doing in terms of computer activity during the
39          exam, et cetera, that's a road map for potential
40          competitor to know what my client's features are,
41          what the secret sauce so to speak makes the
42          software work, and would enable a competitor to
43          copy those --
44   THE COURT:  Mr. Pinos?  Mr. Pinos?
45   MR. PINOS:  Yes.
46   THE COURT:  I'm looking at your order, 1(c).  Why is
47          1(c) needed?
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9
Order

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 1    MR. PINOS:  In the draft order?
 2    THE COURT:  Yes.
 3    MR. PINOS:  Well, that goes to his [indiscernible] to
 4         people to try and find the source code.  Or it
 5         would relate to, for example, him publishing
 6         instructions on how to get at the URLs or the
 7         links to the embedded videos to allow someone
 8         else to publish them.  So it goes with the
 9         infringement of copyright and really addresses
10         the aiding and abetting the infringement of
11         copyright.
12    THE COURT:  I see.  All right.  Well, Mr. Pinos, I am
13         satisfied that the order requested should be
14         granted without belabouring the point.  I think
15         you have shown that there is a serious issue to
16         be tried, that there is irreparable harm to the
17         plaintiff and that the balance of convenience
18         favours the granting of an interim injunction in
19         the circumstances of this case.
20              I note that paragraph 2 of the requested
21         order gives the defendant five days clear notice
22         to the plaintiff to set aside this injunction
23         which is appropriate and there is an undertaking
24         to abide by any court order the court may make as
25         to damages.
26              So I am prepared to sign the order that has
27         been vetted.  Madame Clerk, do you have a pen
28         there?  And I shall fill in the dates here.  I
29         have signed the order, sir.
30    MR. PINOS:  Thank you very much, My Lord.
31         Mr. Hellrung will be attending to the court later
32         this morning to complete [indiscernible] and get
33         a copy of [indiscernible].
34    THE COURT:  Thank you.
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Reporter certification

1   MR. PINOS: Thank you very much, My Lord. Have a good
2   day.
3   THE COURT: Thank you.
4
5   **(PROCEEDINGS ADJOURNED AT 10:48 A.M.)**
6
7   **REPORTER CERTIFICATION**
8   **I, Glaucia R. Fadigas de Souza, RCR,**
9   **Official Reporter in the Province of British**
10   **Columbia, Canada, do hereby certify:**
11   **That the proceedings were transcribed by me**
12   **from audio provided of taped proceedings, and the**
13   **same is a true and correct and complete**
14   **transcript of said recording to the best of my**
15   **skill and ability.**
16   **IN WITNESS WHEREOF, I have hereunto**
17   **subscribed my name on this 14th day of October,**
18   **2020.**
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22   **_____**
23   **Glaucia R. Fadigas de Souza, RCR**
24   **Official Reporter**
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IN THE SUPREME COURT OF BRITISH COLUMBIA

BETWEEN:

PROCTORIO, INCORPORATED

PLAINTIFF

AND:

IAN LINKLETTER

DEFENDANT

AFFIDAVIT

Arvay Finlay LLP
1512 – 808 Nelson Street
Box 12149, Nelson Square
Vancouver BC V6Z 2H2
Tel: 604.696.9828
Fax: 1.888.575.3281
File No. 20471