



Promise and Perils of Online Proctoring

Malcolm Hays

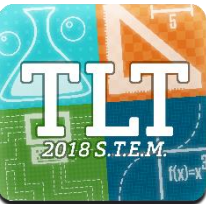
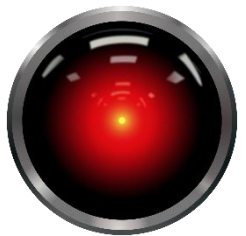
Instructional Technologist

Missouri S&T

mhays@mst.edu

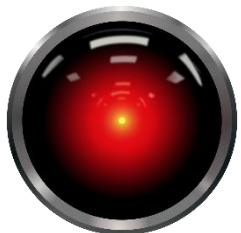
Why do you give exams?

What is the purpose of
proctoring?



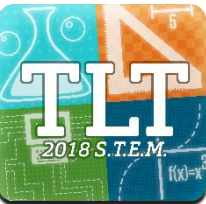
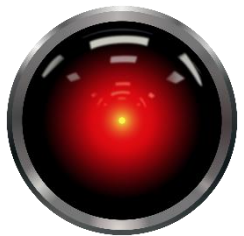
Academic Integrity

- Literature on online courses suggest that students are likely to cheat in an online environment (Alessio, Malay, Maurer, Bailer, & Rubin, 2017).
- “The most commonly reported challenge in online assessment is how to maintain academic integrity” (Hollister & Berenson, 2009).
- Higher Education Opportunity Act of 2008
 - Accrediting agencies require distance education programs validate identity of students and provide assurances that work is completed by actual enrolled students.



How Students Cheat

- Obtain exam questions/solutions from files (online, fraternities, etc.)
- Conspire with classmates.
- Test banks from publishers
- Collusion with proctors
- Whatever means they think they can get away with

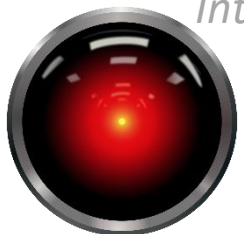


Dependable Distributed Testing Risks

- Testing management
- Impersonator
- Computer misuse
- Forbidden stuff (unauthorized materials)
- Accomplice
- Test leakage
- Electronic warfare

Risks can be mitigated, but NEVER eliminated!

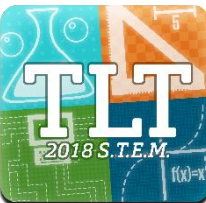
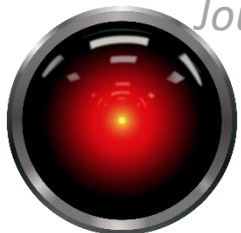
Frank, A.J. (2010). Dependable distributed testing: Can the online proctor be reliably computerized? 2010 International Conference on e-Business (ICE-B), Athens, Greece, 1-10.



Online Exam Control Procedures

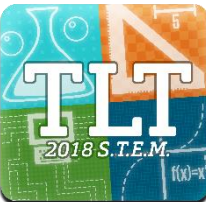
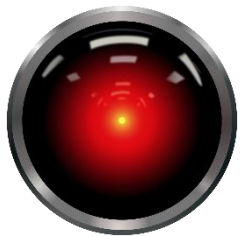
1. All students (including distance) take exam at same time.
2. Short exam accessibility.
3. Randomized questions.
4. One question at a time.
5. Exam designed to fit within allotted time.
6. One-time access to exam.
7. Lockdown browser.
8. Change exams between terms.

Cluskey, G.R., Ehlen, C.R., & Raiborn M.H. (2011). Thwarting online exam cheating without proctor supervision. *Journal of Academic and Business Ethics*, 4, 1-7.



Online Proctoring Features

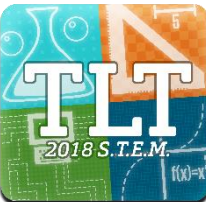
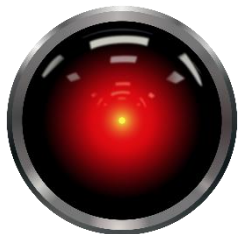
- Webcam / microphone
- Live monitoring of student/exam/test environment by remote proctor
- Secure authentication & identification
 - Username / password
 - Keystroke pattern analysis
 - Fingerprint identification
 - Photo taken next to their approved picture id (student id or driver's license).
 - Public-records questions
- Lockdown browser (optional)
- Review of exam recording by proctor / instructor



Exam Questions for Online Proctoring

Easy question types:

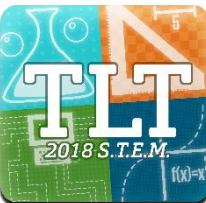
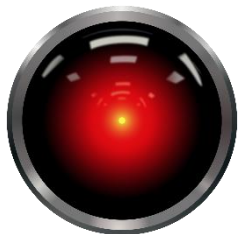
- Multiple Choice, T/F, Multiple Answer
- Fill in the Blank
- Numerical Answer
- Essay / Short Answer
- Matching
- SIMPLE Formula Questions



Exam Questions for Online Proctoring

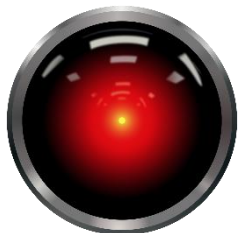
Hard question types:

- Sketches, diagrams, graphs
- “Show your work” problems
- Multiple-part questions
- Form-based questions
- File-upload questions



Promises of Online Proctoring

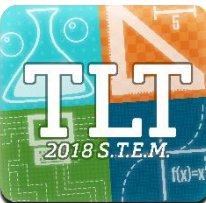
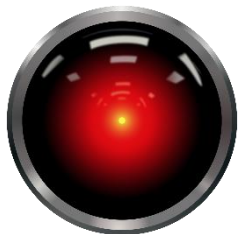
- Low-cost alternative for distance students
 - \$15-\$30 per exam based on system and length of exam
- Low burden of implementation on teachers/students
 - Students need to meet tech requirements
 - Teachers just need to create exams in online proctoring system/LMS
- May not even be required for many assessments
 - Alternatives may exist for summative/formative assessment
 - Local instructional design team can offer possible solutions
- Online proctors are
 - paid for their work
 - trained to detect cheating behaviors
 - record the entire exam session for later review



S&T's Results with ProctorU

Since Fall 2017 (when we started with ProctorU)

- 215 sessions
- 68 exams
- 124 test takers
- 4 incidents (all flagged as “medium” priority)
- Approximate costs for FS2017: \$3,400 (with late fees)
 - Average cost per session: \$16

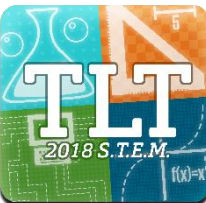
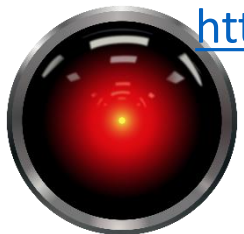


Future of Online Proctoring

Automated proctoring system (ProctorU Auto)

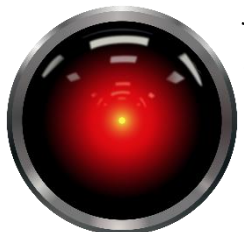
- Artificial intelligence monitors student
- Real-time alerts for suspicious behavior
- Instructor can monitor in real time
- Faster turn-around times on recordings
- No special hardware (other than webcam) required

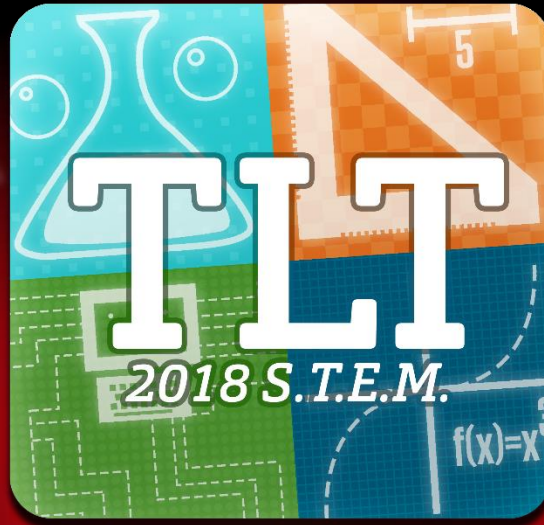
Colby, M. (2018). ProctorU Auto – Canvas Demo Days [Webinar]. Retrieved from:
<https://www.youtube.com/watch?v=mqfVrFsGEGk&feature=youtu.be>



SOURCES:

- Alessio, H.M., Malay, N., Maurer, K. Bailer, A.J., & Rubin, B. (2017). Examining the effect of proctoring on online test scores, *Online Learning* 21(1). <http://dx.doi.org/10.24059/olj.v21i1.885>
- Barnes, C., & Paris, B.L. (DATE). An analysis of academic integrity techniques used in online courses at a southern university. Retrieved from https://www.researchgate.net/profile/Cynthia_Barnes3/publication/264000798_AN_ANALYSIS_OF_ACADEMIC_INTEGRITY_TECHNIQUES_USED_IN_ONLINE_COURSES_AT_A_SOUTHERN_UNIVERSITY/links/00b4953c7d68919e06000000.pdf
- Berkey, D., & Halfond, J. (2018). Cheating, Student Authentication, and Proctoring in Online Programs. *The New England Journal of Higher Education*. Retrieved from <http://www.nebhe.org/thejournal/cheating-student-authentication-and-proctoring-in-online-programs/>
- Cluskey, Jr., G.R., Ehlen, C.R., & Raiborn M.H. (2011). Thwarting online exam cheating without proctor supervision. *Journal of Academic and Business Ethics*, 4, 1-7
- Fask, A., Englander, F., & Wang, Z. (2014). Do Online Exams Facilitate Cheating? An Experiment Designed to Separate Possible Cheating from the Effect of the Online Test Taking Environment. *Journal of Academic Ethics*, 12, 101-112. doi 10.1007/s10805-014-9207-1
- Foster, D., & Layman, H. (2013). *Online Proctoring Systems Compared*. Retrieved from <https://www.caveon.com/wp-content/uploads/2014/03/Online-Proctoring-Systems-Compared-Mar-13-2013.pdf>
- Foster, D., Mattoon, N., Walker, P., & Shearer, R. (2009). Using multiple online security measures to deliver secure course exams to distance education students. Retrieved from https://www.ou.nl/Docs/Campagnes/ICDE2009/Papers/Final_Paper_101Walker.pdf
- Frank, A.J. (2010). Dependable distributed testing: Can the online proctor be reliably computerized? *2010 International Conference on e-Business (ICE-B)*, Athens, Greece, 1-10. Retrieved from <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5740454&isnumber=5740398>
- Hylton, K., Levy, Y., & Dringus, L.P. (2016). Utilizing webcam-based proctoring to deter misconduct in online exams. *Computers & Education*, 92-93, 53-63. <https://doi.org/10.1016/j.compedu.2015.10.002>
- Li, X., Chang, K., Yuan, Y., & Hauptmann, A. (2015). Massive Open Online Proctor: Protecting the Credibility of MOOCs Certificates. *CSCW '15*. <http://dx.doi.org/10.1145/2675133.2675245>
- Milone, A.S., Cortese, A.M., Balestrieri, R.L., & Pittenger, A.L. (2017). The impact of proctored online exams on the educational experience. *Currents in Pharmacy Teaching and Learning* 9, 108-114. <http://dx.doi.org/10.1016/j.cptl.2016.08.037>
- Rodchua, S., Yiadom-Boakye, G., & Woolsey, R. (2011). Student Verification System for Online Assessments: Bolstering Quality and Integrity of Distance Learning. *Journal of Industrial Psychology*, 27(3), 1-7.
- Colby, M. (2018). ProctorU Auto – Canvas Demo Days [Webinar]. Retrieved from: <https://www.youtube.com/watch?v=mqfVrFsGEGk&feature=youtu.be>





Questions?

Malcolm Hays

Instructional Technologist

Missouri S&T

mhays@mst.edu