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Integrating remote proctoring in dental education: Problem, solution, and results

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1 | PROBLEM

On March 10, 2020, the Governor of Massachusetts declared a state of emergency.[1] In response, at Tufts University School of Dental Medicine (TUSDM) from March 16, 2020, all "in person" classes for the DMD and Advanced Education programs have been transitioned to virtual experiences. ExamSoft is the program TUSDM uses to create and deploy exams for predoctoral students. Examplify is the software, owned by the same company, that students use to download and take the exam. However, a physical proctoring presence was always there monitoring and aiding students with minor logistical help. In order to ensure academic continuity, use of technology and providing remote proctoring has become a top priority.[2]

2 | SOLUTION

With the support of the University's Educational Technology Services, beginning March 25, TUSDM pioneered at the university level the use of remote proctoring. ExamID is an exam integrity tool added to an existing Examplify account that confirms students' identities prior to allowing access to an assessment (Figure 1). ExamMonitor is the AI-driven remote proctoring solution

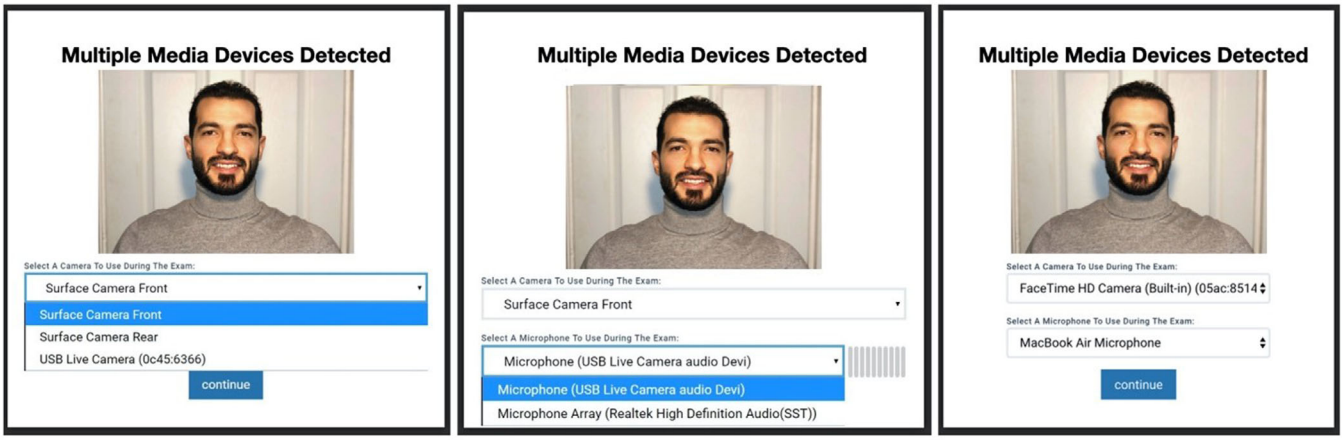

FIGURE 1 Setup (video and audio) from the student view (image courtesy from Dr. Modar Alroomi, IS DMD Class of 2021)

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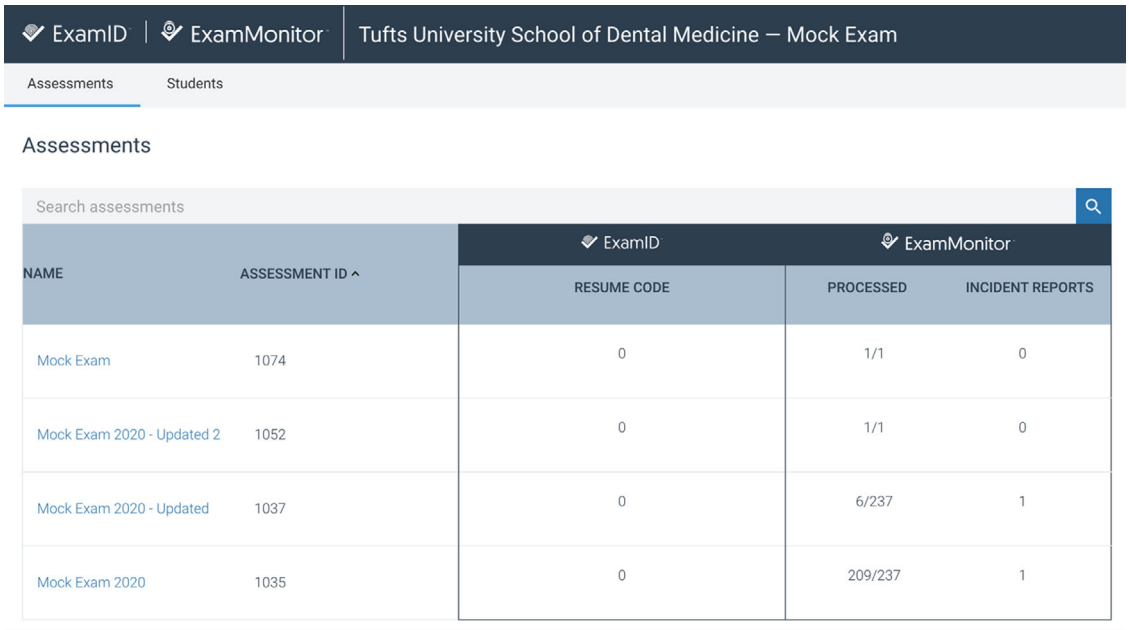

FIGURE 2 Review of incidents reported by ExamID/ExamMonitor

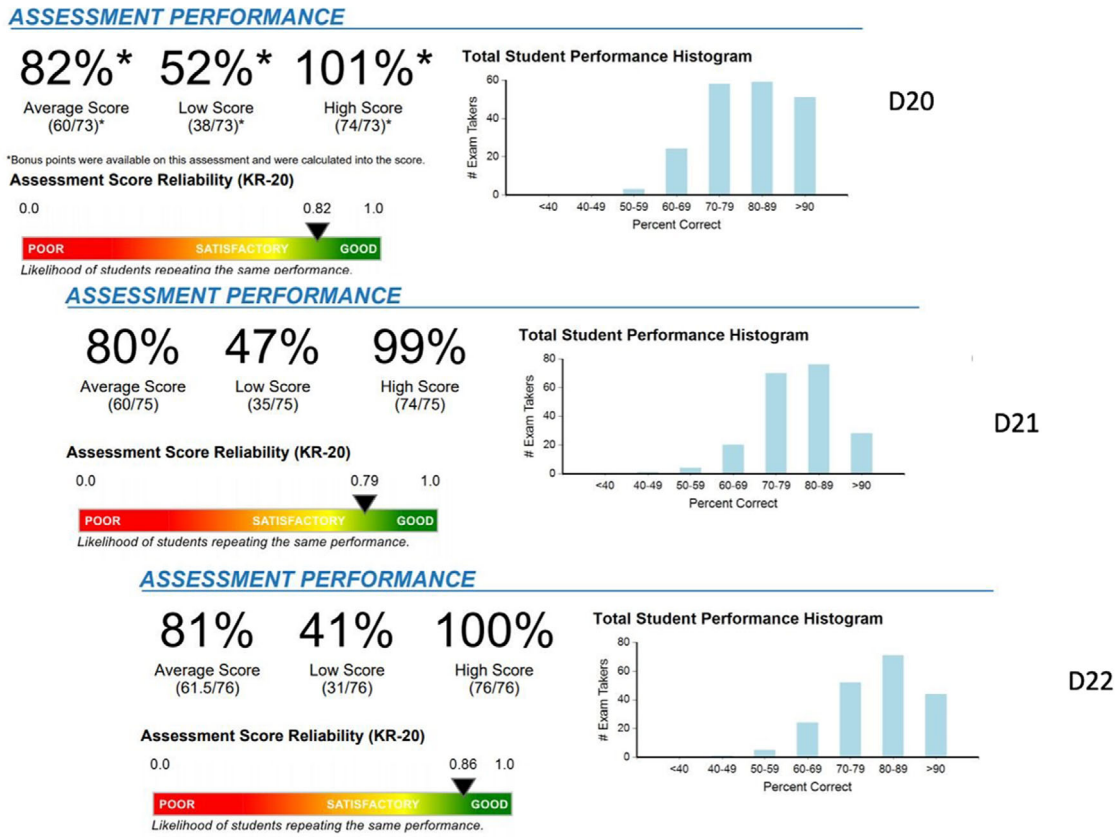

FIGURE 3 Direct comparison of the psychometrics reports of the past years with in-person proctoring versus remote proctoring (same discipline)

that continuously records exam takers with video and audio monitoring throughout the entire exam. When the exam is completed, the videos are uploaded and reviewed for potential breaches of academic integrity (Figure 2). https://examsoft.com/exam-monitor.

3 | RESULTS

3.1 | What went well

In the past 6 weeks, over 30 examinations were administered to the classes of D'21, D'22, and D'23 with remote proctoring software. The preliminary review of the student performances (Figure 3) appears to be in alignment with those in previous years, based on the psychometrics reports for the same discipline (KR-20 value is consistent, if not improved). There is a general positive feedback from both students and faculty on the remote proctor experience. The expenses associated with adding ExamID/ExamMonitor were covered by Tufts University and there was no charge to the students.

3.2 | What did not go well

Resistance to change during any critical situation has been well documented, specially from faculty members and administrators that are digital immigrants.[3] Some course directors initially preferred to either delay the time of examination and/or reduce the content tested, as they were not comfortable using this technology. In a time of transition and adaptation to virtual experiences, this created additional pressure to the administrative team and confusion for the students. While remote proctoring proved to be a timely solution, the emotional needs of students who may feel stress in using unfamiliar technologies for high-stakes exams needs to be considered. The software detected significant amounts of incidents, as the use of scrap paper was allowed to facilitate the transition for the students from the "in-person" to a virtual experience.

3.3 | Lessons learned

Integrating latest technological advancements together with best pedagogical practices for assessment remains one of the major challenges in this transformative transition to a virtual dental educational experience.[4] Assessing collaboratively with all stakeholders (ExamSoft, students, course directors, administrators) after every iteration and improve step-by-step processes was critical. Collaboration at the university level with the other schools (Medical, Veterinary, Biomedical Sciences) using the same technology was key. Based on these lessons, remote proctoring for advanced education programs is planned. Future developments in remote proctoring may integrate eye-tracking technology to identify gaze patterns and provide valuable data for the reported incidents.[5]

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