



GMIT

INSTITIÚID TEICNEOLAÍOCHTA NA GAILLIMHE-MAIGH EO
GALWAY-MAYO INSTITUTE OF TECHNOLOGY

ONLINE PROCTORING EXPERIENCE

Review of the online proctoring experience in the Department of Enterprise
and Technology (School of Business) and Teaching and Learning Office
Dr Carina Ginty, Phelim Murnion, Eamon Walsh, Jessica Duffy

Pilot 2019-2020.

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Section 1: Introduction

In 2019-2020, the School of Business, Department of Enterprise and Technology undertook a pilot study of online proctoring (invigilation) on two Springboard programmes. This study forms part of a digital assessment project with the GMIT Teaching and Learning Office. Online Proctoring (OP) is a digitally supervised online exam administered through the Internet and a student's web camera. Online proctoring exams allow students to conveniently take an exam, in the comfort of their home or office, while being monitored by an off-site online proctor.

Project team included: Dr Carina Ginty (GMIT Teaching and Learning Officer), Eamon Walsh (HoD Dept. of Enterprise and Technology), Phelim Murnion (Snr. Lecturer IT/ Data Analytics), Jessica Duffy (T&L Office Project Coordinator) and Computing Services.

Project Timeline: February 2019 – June 2020

Brief description of the pilot project:

1. Conduct a pilot study of online proctoring in the School of Business. Online proctoring is supervision of an online exam remotely to ensure the identity of the student and the integrity of the exam environment.
2. Work with a service provider, ProctorExam, an online proctoring services company based in the EU, to investigate the teaching and student learning experience of assessments invigilated online through the GMIT Virtual Learning Environment.
3. The pilot study may inform future plans in developing online invigilation and proctoring services for GMIT programmes across all schools/campuses.

Project aims and objectives:

- To engage online/blended learning students in the School of Business with a new online exam authentication service.
- To investigate the impact on the student learning and teacher experience.
- To pilot the process and IT integration requirements.
- Gain a better understanding of how-to best support teachers and students engaging with the service in the future.
- To investigate the services and costs involved, plus the student and teacher time involved in online proctoring services.

Selection of service provider:

The team undertook a high-level review of four international online exam/assessment proctoring service providers. The review process included discussion with our partners in the CUA with prior experience of proctoring, secondary research on proctoring services and meetings/demonstrations with the following proctoring service providers.

- ProctorExam (<https://proctorexam.com/>)
- Examity (<https://examity.com/>)
- Proctor U (<https://www.proctoru.com/>)
- Test Reach (<https://www.testreach.com/remote-invigilation-online-proctoring.html>)

Following the review process, ProctorExam (see Appendix A) was selected as the preferred supplier. It is an EU enterprise, with a proven track record of working with higher education institutes and professional bodies. It is also GDPR compliant in its operations and this was a key decision factor. From start-up design stage, Proctor Exam has collaborated with European academic providers and today offers a full suite of solutions to secure exams taken remotely (see Appendix B), but while keeping full control of an institute's own data and local assessment processes.

Section 2: Pilot Process

2.1 Motivation for the Project

The trial of online proctoring was motivated by a need to run timed, supervised examinations in an online learning environment. In December of 2018, the Department of Enterprise and Technology was preparing to commence a new Certificate in Business Analytics online programme. The initial programme design was heavily reliant on projects as an assessment method, in part due to the perceived difficulty of requiring distance learning students attend invigilated examinations on the Galway campus. As part of the preparation, members of the academic team attended a workshop on Curriculum Design run by the Teaching & Learning Office. Arising from the workshop, one of the lecturers (Phelim Murnion) and the T&L Officer (Dr Carina Ginty) decided to explore services for invigilating (proctoring) online examinations.

As a result of these discussions it was decided with the Head of Department (Eamon Walsh) to use a module on the new programme (Statistics in Business Analytics), designed and delivered by Mr Murnion, to pilot a proctoring service.

2.2 Project Preparation

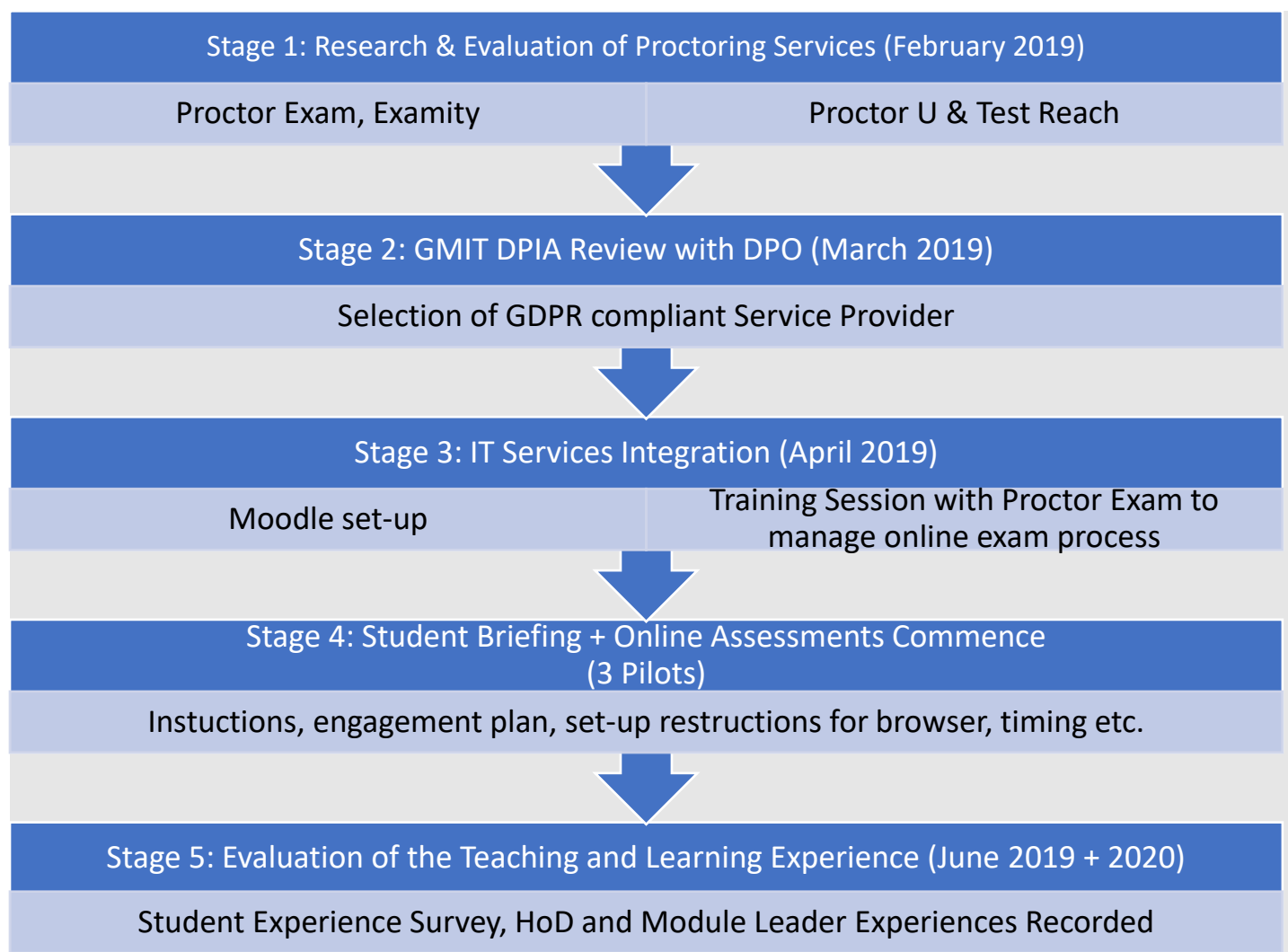
In January 2019, secondary research commenced including discussions with other higher education institutions (CUA partner IT Sligo and DCU) on their experiences with online proctoring. In February 2019, the primary work commenced with meetings and demonstrations with selected service providers. In March 2019, the selection process was completed, and ProctorExam was chosen (see Table 1).

2.3 GDPR Considerations

The General Data Protection Regulation (GDPR) provides an essential framework and legal requirements for any process involving student personal data. Online proctoring involves the recording of screen activity and video recording of the student from webcam which is personal biometric data. The GMIT Data Protection Office was actively involved in the preparation phase (Stage 2 below) guiding a process for evaluating the GDPR compliance of the potential service providers. We completed a Data Protection

Impact Assessment (DPIA) Screening Check List (see Appendix C and step one of a full DPIA). The conclusion of that process was that a full DPIA was not required at that stage and that the EU-based service provider ProctorExam was GDPR compliant.

Table 1: Pilot Process Stages



2.4 Pilot Implementation

The proctoring service was piloted in three cases: a Statistics module in Spring 2019, a Business Intelligence module in Winter 2019 with the same student cohort, and finally the Statistics module in Spring 2020 with a new student cohort. For each of these pilots, students were provided with a set of instructions (see Appendix D) for their upcoming online assessment(s) and an Online Proctoring Information Sheet and Consent Form (see Appendix E) request to participate in the pilot(s).

2.5 Pilot Cases

Pilot One

The online module (Statistics in Business Analytics) was designed with three assessment components: weekly Moodle quizzes (20%), a mid-term timed Moodle Quiz (30%) and a terminal timed examination consisting of a mixture of question types worth 50%. Due to the high-stakes nature of the terminal exam and the requirement for complex case study style questions using an open book approach, the terminal examination was considered appropriate for online proctoring.

The students were already familiar with the online examination process for the module, having completed the mid-term test. They were also provided with a guide to online proctoring on the Programme landing page and a separate FAQ and dedicated discussion forum in the module Learnonline site. The exam consisted of a Moodle Quiz containing a mixture of autocorrected questions and some open ended, case study style, manually marked questions. The quiz was open for a week (in April) with a time limit of 150 minutes once started.

Because the students had already registered for the programme before the pilot study was initiated they were specifically asked to consent to the use of proctoring in the terminal exam after enrolling for the module, with alternative options of (1) a non-proctored online examination, and (2) a traditional exam session invigilated at GMIT. All three examinations were identical in structure and format, except that the GMIT invigilated exam had a single start and finish time (as per usual). Twenty-four students consented for the Proctoring pilot, twenty-four students opted for the non-proctored exam, and one student attended GMIT for the invigilated exam. The administration of three separate examination processes for one assessment was useful for the pilot study process but clearly impractical in normal operations.

Pilot Two

The second pilot was carried out in the Business Intelligence module in Winter 2019. Again, the terminal examination (worth 55%) was used for the proctoring trial. This cohort of students had already completed the Statistics module and Pilot One above. Once again, a separate discussion forum for exam questions and an FAQ page were provided. The online exams followed the structure and format used in the previous Statistics module, timed for two hours and open for six days in mid-December. Twenty-five students took the proctored exam and 16 took the non-proctored option. No students elected to take the offline exam at GMIT.

Pilot Three

The final pilot was carried out in the Statistics module for the new Certificate intake (Spring 2020), again for the terminal examination only. As a result of experience from Pilot One the student consent process was moved to the programme enrolment process. This cohort of students were enabled to consent to proctoring for the entire programme and removing another administrative task for the module lecturer.

All preparations and the exam structure were the same as in Pilot One above. There were minor changes to the exam timings, but these were not related to the proctoring process or the pilot. All of the students chose to take the proctored exam. A separate (proctored) exam was run the following week for six students for technical reasons: two had proctor related problems (not replying correctly to an official proctor service email to get a link to the exam). The other four had problems unrelated to proctoring.

Section 3: Stakeholder Experience of Online Assessment

3.1 Student Experience of Online Assessment

GMIT students who sat the online exam were asked to provide feedback of their assessment experience by completing the GMIT Online Exam Experience Survey (see Appendix E). Participants from various age groups (Figure 1) were asked questions about the number of online exams they sat (Figure 2), quality of support provided, and whether they would recommend online assessment to their friends. To date, 29 responses have been received. Survey participants were not offered an incentive to participate in this survey.

Figure 1: Age of Students who completed a GMIT Online Exam

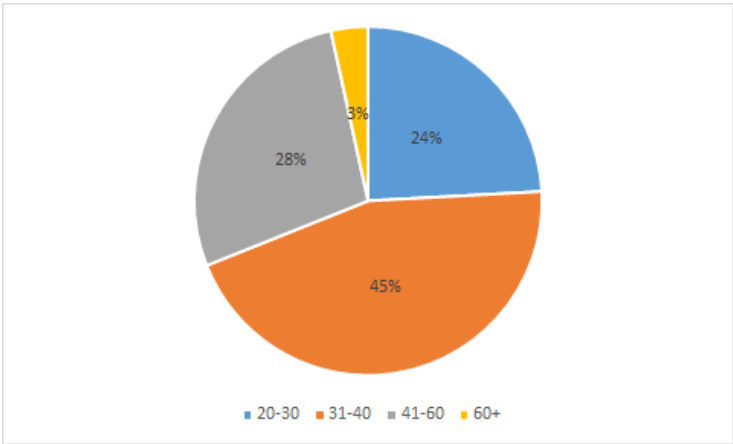
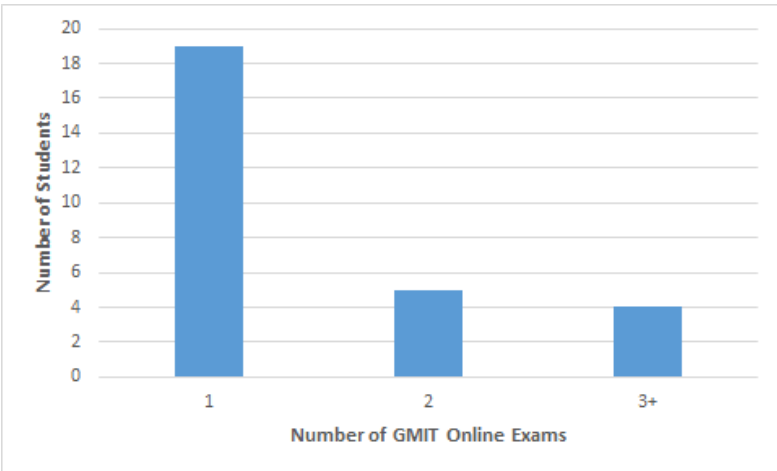


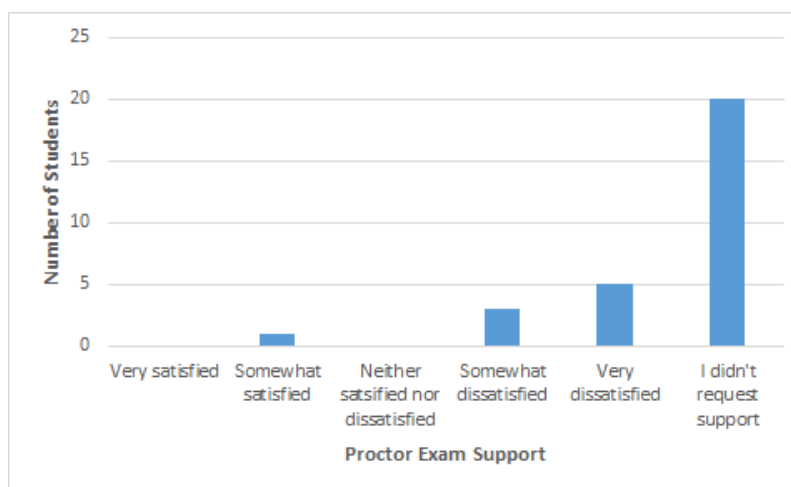
Figure 2: Number of GMIT Online Exams Students Completed



Out of the 29 responses, six students indicated they were not provided with enough information about the online exam procedure prior to their online assessment. Students cited issues with firewalls, accessing passwords, availability of a step-by-step guide, and timing. Furthermore, 18 students reported some difficulties with the use of technology during their online assessment experience. Issues included: pages not working, losing or slow connection, and screensharing.

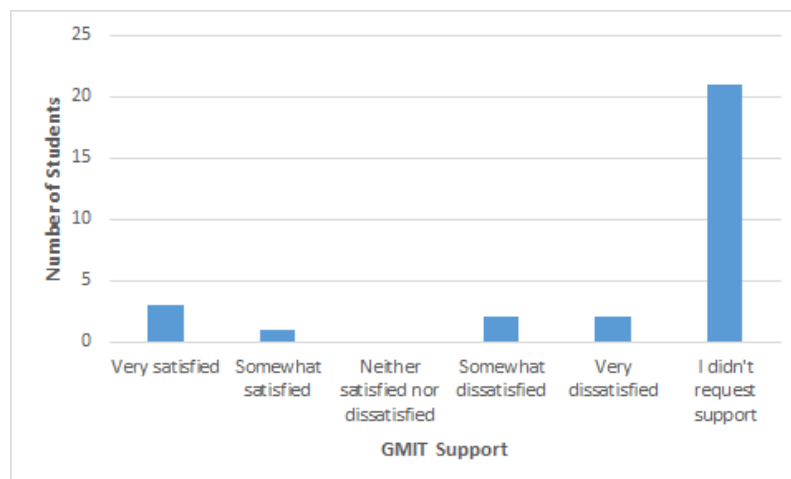
The proctoring service (ProctorExam) provides a real-time online support system using a chat box. Students used this service only when encountering problems in setting up the service and in sitting the exam. Most students did not require the service, but those that did were more likely to be dissatisfied than satisfied with the support (Figure 3).

Figure 3: Proctor Exam Support via Student Helpdesk



As this was a pilot study, there was no official GMIT support service. However, the students were able to contact both the module lecturer and the Head of Department by email or via a discussion forum. Again, most students did not request support and those that did were approximately evenly split between satisfied and dissatisfied (Figure 4).

Figure 4: GMIT Support



On a scale from 1-5 (1 = not satisfied at all, 5 = really satisfied), students rated the overall quality of the service an average of 3.31 and the likelihood (1 = very unlikely, 5 = very likely) that they would recommend online exams to their friends received an average rate of 3.14.

Students were given the opportunity to provide additional feedback by answering an open-ended question. Feedback included:

“useful if enough exam time allocated and if student has a good internet connection...Online support needs to improve, proctor support were not very helpful”

“My positive experience was very much specific to the lecturer...he humanised a process that was delivered in a very automated, hands-off manner for the entire semester”

3.2 Academic Experience of Online Proctoring

The online proctoring was implemented in the Department of Enterprise and Technology on the (Certificate in Business Analytics online (Springboard) programme. The academics involved were the Head of Department and the lecturer for the two modules used (Statistics for Business Analytics and Business Intelligence).

3.2.1 Description of the academic experience

The preparation for the proctored exam by the lecturer/examiner was more time consuming than for alternative methods such as student project. There was also increased pressure on the examiner/lecturer due to the fact that the technology and the service was new, that no other examiner was involved in proctoring (for discussion and comparison) and that the time was constrained because the pilot was rolled out as the (new) programme was also rolling out. Furthermore, the process was very hands-on for the lecturer whereas terminal examinations are usually entirely managed by the Institute Examinations Office. The longitudinal nature of the project was very beneficial as the process became easier and less stressful over each iteration (pilots 1 to 3 above). The Head of Department was actively involved in the project: communicating with students; liaising with the T&L Office and the service provider; and engaging in the technical aspects of proctored exam set-up. In comparison with other assessment methods there was a very high level of lecturer-student communications over the weeks before the exam and while this increased the workload, it also ensured a high level of stakeholder engagement and interaction.

Communications with the service provider were always good, but the level of detailed documentation of the actual service and the technology was not as high. The week of the actual proctored assessment involved more pressure for the lecturer/examiner due to constant checking of email and discussion forum(s) to spot student exam problems. This was mostly due to the innovative nature of the process and dropped significantly by the third iteration.

The objective of the pilot was to provide an alternative assessment methodology to the online quizzes and offline student projects which are the main methods used across online programmes. **The proctored exam provided the students with the context and atmosphere of a strict, valid, externally moderated exam, that they are used to**

in traditional ‘offline’ education. While it was clear that the students were concerned about the exam process, they were also highly motivated and actively engaged as a result of the (proctored) examination method.

3.2.2 Academic evaluation and analysis

The workload and level of stress and responsibility for the individual lecturer/examiner are clearly related to (a) the new nature of the technology and (b) the solitary nature of a trial process. This can be eliminated or highly mitigated by adopting an institutional process including clear processes and documentation and administrative support. The key factor is the difficulty of handling student consent. This is a potential extra layer of administration for the lecturer and is not an appropriate action at the module level. Furthermore, having students with consent for proctoring and others without consent requires parallel assessments. This presents a serious barrier to widespread implementation.

The active involvement of the Head of Department in all aspects of the implementation was extremely important in moderating the workload for the individual lecturer/examiner. Similarly, the active involvement of the T&L Office in the preparation phase was critical and without that the pilot might never have launched. The T&L Office has also been actively involved in the post-iteration documentation and evaluation stages which are essential to the success of the pilot process.

The primary objective of the pilot was to evaluate the usefulness of the proctoring service and in that respect the pilot succeeded. The lecturer was able to complete a critical academic task: student assessment, and the students were able to undertake that assessment in an environment that was controlled and monitored while still providing the freedom from time and locations constraints that online education offers.

The integration between ProctorExam and GMIT’s Moodle system (LTI integration) was setup with assistance from GMIT Computing Services and was seamless to the student. The integration was setup as an “LTI basic link”, which required the student to navigate to the correct section of Moodle containing the assessment being taken. While we attempted a more advanced integration which would direct the student straight to the assessment within a Moodle page, this was not achieved.

Section 4: Pilot Conclusion

The key conclusion of online proctoring is that it works, in a real GMIT-specific context. Moreover, it does provide that special assessment experience that learners only get from a timed, monitored exam, that despite the challenges involved, provides a unique learning experience that complements the experience provided by student projects and low stakes quizzes. As a result, the quality and standard of the Programme is improved.

The pilot study academic team (lecturer and Head of Department) discovered those specific parts of online proctoring that are easy and those that are difficult. The basic requirements are for clear, well

documented processes and adequate administrative support. With these in place online proctoring should be no more difficult than standard exam invigilation systems. As an example a Proctoring Procedure Guide has been created as an output of this pilot project (see Section 5). Furthermore (like many aspects of online education) online proctoring requires more interdisciplinary collaboration (Administration, Teaching & Learning, Computer Services, and Data Protection Office) than ‘traditional’ assessment systems.

The major constraint on the widespread practical implementation of Proctoring is the reliability of the consent process. If GMIT is to move to a truly blended learning environment, then services like proctoring would have to be considered an essential requirement of the learning environment.

A number of actions are recommended, as a result of the pilot experience:

1. It is recommended GMIT purchases an agreed number of seats per year with ProctorExam to facilitate online proctoring services across the Institute.
2. Include Online Proctoring as a key project under the GMIT BOLT initiative for the Exam Office in GMIT. An administrator user guide has been provided as an output from this project (see Section 5).
3. It is recommended to resolve the LTI – Moodle integration issue with ProctorExam.
4. The process for managing student consent under GDPR is a key factor. It is essential that student consent is organised prior to enrolment on a module. It is recommended that this is organised at student registration. Furthermore, in light of the institutional shift towards a blended learning environment, services like proctoring should be considered a requirement of registration, at least for students of online programmes and possibly for all students.

Section 5: GMIT Online Proctoring Procedure Guide

An administrator’s user guide has been prepared by Eamon Walsh, Head of Department of Department of Enterprise and Technology and this is based on his experience with integrating ProctorExam services in GMIT. The online guide can [be accessed here](#).

Separately there is an example of instructions for students in the appendices.

Appendices

The appendices include items A-I outlined below. Click on each item and it will take you to the complete document/resource. Please note, some items in the appendices (Appendix G, H and I) are not directly related to the GMIT ProctorExam experience, but they are very relevant to supporting engagement and development of online proctoring services in GMIT long term. Appendix G, H and I represent case examples of the online proctoring procedure at IT Sligo, the LiveView Services with CIT and Implementing remotely invigilated online exams at scale in the University of New England.

[Appendix A: Proctor Exam Services and Pricing Model](#)

[Appendix B: 2020: Implementing remotely invigilated online exams at scale | Transforming Assessment](#)

[Appendix C: GMIT DPIA Assessment with DPO in 2019](#)

[Appendix D: Instructions for Students - Communication](#)

[Appendix E: Proctor Exam Privacy Statement Record and Consent Form to Participate in Online Assessment](#)

[Appendix F: GMIT Online Exam Experience Survey](#)

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