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Sustainable Online and Digital Assessment Practices in Higher Education: the case of an English University during the COVID19 pandemic

Práticas de Avaliação Online e Digitais no Ensino Superior: o caso de uma universidade inglesa durante a pandemia COVID19

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Abstract: In this paper, we discuss the approach taken to online and digital assessment by an English university during the Covid19 pandemic. We explore this case because of the institutional investment in changing its assessment approach during the pandemic. This approach is explored against a sustainability model for learning technologies adoption, specifically looking at level 1 - financial support; level 2 - instructional and technical support; level 3 - institutional ownership; level 4 - institutional impact; and level 5 - stakeholders' ownership. This will hopefully help academics and institutions to both reflect on past experiences and think forward about the sustainability of their online and digital assessment strategies. We argue in this paper that higher education should be looking at the electronic management of the assessment process in a more sustainable way. This paper concludes by recommending institutions to embrace the efforts made during the pandemic and rethink how online and digital assessments can be managed over time to encourage authentic learning.

Keywords: online and digital assessment; sustainability; higher education; electronic management of assessment.

Resumo: Neste artigo, discutimos a abordagem desenvolvida para a avaliação online e digital por uma universidade inglesa durante a pandemia Covid19. Exploramos este caso devido ao investimento institucional na mudança da sua abordagem de avaliação durante a pandemia. Esta abordagem é explorada face a um modelo de sustentabilidade para a adoção de tecnologias de aprendizagem, analisando especificamente o nível 1 - apoio financeiro; nível 2 - apoio instrucional e técnico; nível 3 - apropriação institucional; nível 4 - impacto institucional; e nível 5 - apropriação dos agentes educativos. Espera-se que o artigo ajude quer os docentes quer as instituições de ensino superior a refletirem sobre experiências passadas e a pensar na sustentabilidade das suas estratégias de avaliação digital e online. Neste documento, defendemos que o ensino superior deveria analisar a gestão digital do processo de avaliação de forma mais sustentável. Terminamos este artigo recomendando às instituições que abracem o esforço feito durante a pandemia para repensar as estratégias de avaliação, refletindo sobre a forma como a avaliação online e digital pode ser gerida ao longo do tempo para promover uma avaliação potenciadora de aprendizagens autênticas.

Palavras-chave: avaliação online e digital; sustentabilidade; ensino superior; gestão eletrónica da avaliação

1. Introduction

Learning technologies and Higher Education (HE) have not been the best of friends over the past two decades. Although technological developments have been introduced in HE as quickly as they have been introduced in society, they were often introduced by individual academics through small-scale research projects or scholarly initiatives. Those innovations are often unstainable because they are not foreseen by the mainstream academic community as enablers. Academics feel that those technological innovations go beyond their own teaching needs and cannot see an additional value for using them (Granić & Marangunić, 2019). Whilst a considerable body of innovation in research around learning technologies exists, mainly driven by these small-case initiatives, its influence in shaping technological implementations at the macro-level of the institution is still limited. More frequently observed are stand-alone implementations which typically lead to fragmentation of practices across the institution and a 'disintegrated' student experience (Kirkwood & Price, 2016; Price et al., 2017).

The more widespread use of a learning technology in HE has been probably the projector screen and the MS PowerPoint. Indeed, the MS PowerPoint is probably the living proof that technologies can shape the way we teach and students learn. When introduced in the early 90s, PowerPoint presentations had the advantage of including visual appeal, organized notes, animated graphics, and up-to-date information through links to the World-Wide Web with minimal financial and economic costs (Daniels, 1999). Since then, it has been widely used for teaching purposes. Its good or bad use has been documented in several papers (Jones, 2003) but it is still being used to support teaching and learning.

However, things have changed in the past two years. We are living in a period of extraordinary challenges due to the COVID19 pandemic, which has created an extra layer of complexity in everything related to learning technologies. Institutions were asked to close the campus or significantly change their teaching, learning, and assessment practices. Remote teaching, learning, and assessment became a new concept adopted worldwide (Hodges et al., 2020; Trindade et al., 2020); a "strange" form of teaching and learning that consisted of trying to replicate existing face-to-face practices into synchronous online delivery and a rethinking of assessment practices. Throughout the world, institutions worked against the clock to design and deliver remote teaching and assessment, some more successfully than others. This paper addresses the transition to remote teaching and assessment practices more broadly in the United Kingdom (UK). We will then explore this transition at one English University by presenting the reality before and after the pandemic, detailing the assessment strategy, and presenting the different practices from the lens of academics and senior management. We move on to discuss the sustainability of this transition by analysing and comparing its assessment approach with a framework for Online Learning Sustainability (Casanova & Price, 2018). Lastly, we finish this paper by reflecting on how the Portuguese HE sector can embed some of these practices in their day-to-day business.

2. Review of the assessment practices in the UK

2.1 *Electronic Management of Assessment* (EMA) and online and digital assessment procedures

The HE sector in the UK has changed considerably its *Electronic Management of Assessment* (EMA) landscape in the past two decades (Bausili, 2018; Ferrell, 2014). Whilst more traditional forms of assessment like final exams, performances, presentations, and artefacts have not changed, being mainly performed in a face-to-face environment; written work, in its varied forms, has gradually moved online to the point that in most disciplines at least half of the assessment regime is done through some form of online submission, both in undergraduate and postgraduate programmes (Newland & Martin, 2016).

EMA is widely perceived as instrumental in the reduction of administrative costs, marking efficiency, transparency, and fairness, and increasing accessibility (Bausili, 2018; Newland et al., 2013). UK HE institutions invested significantly in its systems, developed pedagogical training activities and guidance to students and academics, and created new policies on e-marking, e-submission, anonymous marking, or academic misconduct. All of which directly linked to a new consolidated effort to improve the EMA. As discussed by Bausili (2018), the term EMA reflects

> "a more complex understanding of the inherent technological process, cultural and pedagogical tensions around the implementation of e-submission and e-marking technologies and the need for their effective management" (p. 466).

In the UK, the vast majority of HE institutions use Turnitin and Grademark to facilitate EMA, usually in conjunction with their own Virtual Learning Environment (VLE) or other assessment tools (Newland & Martin, 2016).

EMA includes more than just written-based format submissions such as essays, literature reviews, reflections, or open-ended question exercises. It can also include quizzes, multiple-choice questions (MCQs) multimedia submissions (audio, video, or animations), infographics, presentations, links to webpages and portfolios, or any other format that allows upload/link to the system. Grades and feedback are then provided and linked to the student submission. The link to feedback is of major importance in EMA because students need to easily find the feedback in the system. Feedback can be delivered in many different formats or types; a recent study reveals that students prefer electronic feedback in contrast to face-to-face, hand-written, and group feedback and that these preferences differ according to the disciplines. Another interesting finding is the perception of marks as the most important element of feedback which can be associated with various factors, such as the way EMA is designed or the way academics use the system to provide feedback (ElShaer et al., 2020).

The EMA process entails the assessment brief, the marking process, the feedback provided to students, which is both perceived as a requirement and an opportunity for improvement, and the possibility for students to contest their marks. This assessment cycle is typically set to have an established duration which may vary between two and four weeks depending on the institution or level of complexity of the assessment.

Assessment work is usually marked and moderated by internal and external academic staff – both moderations are standard practices as recommended by the sector although not formally explicit in the Quality Code[1]; aiming to address principles 1 and 2 of the guiding principles set by the Quality Code (QAA, 2018):

1. Assessment methods and criteria are aligned to learning outcomes and teaching activities.
2. Assessment is reliable, consistent, fair, and valid.
3. Assessment design is approached holistically.
4. Assessment is inclusive and equitable.
5. Assessment is explicit and transparent.
6. Assessment and feedback is purposeful and supports the learning process.
7. Assessment is timely.
8. Assessment is efficient and manageable.
9. Students are supported and prepared for assessment.
10. Assessment encourages academic integrity.

An external examiner moderates a sample of all assessments within a course; those are more accessible if they are provided in a digital and online format. For example, if all the assessment process is delivered online it becomes possible for the external examiner to evaluate all of the assessment processes, from the quality of the assessment brief to the alignment of the marking criteria with the learning outcomes (principle 1); or from the submission to the similarity report when applicable, marks and feedback. This makes the assessment transparent to all the stakeholders involved. External examiners are asked to evaluate both the design and the delivery of the assessment process.

The growing awareness of cost-effectiveness has led most UK universities to move to a comprehensive approach to EMA. VLEs and electronic marking tools, such as Turnitin, are providing an answer for efficiency and transparency in electronic marking but they simultaneously have an impact in assessment and feedback practices as well as universities and national policy – see, for example, the role given to anonymous marking or to plagiarism detectors in the UK (Bausili, 2018; Newland et al., 2013). There is an agreement that assessment and feedback practices are being shaped by the way learning technologies are designed and the features they make available (Casanova, Alsop & Huet, 2021). Indeed, many authors (Selwyn, 2013; Farrell and Rushby, 2016; Henderson, Selwyn and Aston, 2017) discuss how technology design and its features may shape or influence teaching and institutional practices.

Fulda (2005) explains that not just EMA offers cost and efficiency savings in transcribing grades and reducing the risk of error, but the same interface can be made available to students allowing for quicker and more transparent access to their grades. Agreeing with Fulda (2005), Heinrich et al. (2009) added that documents are easily accessible to all involved in the marking process at any time and place, ensuring

[1] The quality code has been developed by the UK Quality Body for HE – QAA - and in consultation with the higher education sector is a key reference point for UK higher education. It enables providers to understand what is expected of them and what to expect from each other serving the purpose of quality assurance.

therefore that assessment is more transparent and accessible to all the parties involved. Another advantage of EMA is reported by Hartley and Skelton (2002) who signposted that students face difficulties in paper-based assessments when trying to read handwritten feedback comments by their lecturers and therefore do not read or make use of the comments provided.

2.2 E-assessment and E-feedback practices

Assessment and feedback are often placed in the lower score categories of teaching and learning national surveys (Lowe & Shaw, 2019; Williams & Kane, 2009). Research has been pointing out that the UK HE sector appears to favour a transmission model of assessment and feedback by positioning students as passive receivers of information about their work. This is still rooted in a traditional model of assessment where feedback is used not to improve learning but to justify a mark (Amante & Oliveira, 2019; Bailey & Garner, 2010). This view of feedback increases the risk of little engagement and dissatisfaction when students are not satisfied with their mark (Hounsell, 2007; Sinclair & Cleland, 2007) and leads to a discourse of students as consumers, reinforcing instrumental attitudes to learning (MacLellan, 2001) and inhibiting students from taking responsibility for their learning and development (Carless & Boud, 2018; Casanova et al., 2021). It is, therefore, appropriate to state that assessment is currently one of the topics of concern in UK higher education, raising voices in the government, university senior managers, and academic staff.

The use of technology in assessment, learning, and teaching is inconsistent, varying considerably between disciplines, levels of study, modes of delivery, and institutions (Henderson et al., 2017). At early stages, the use of technology aimed at facilitating large-scale testing and reducing costs, but in the last 10 years, there have been more innovative assessments, assessing more complex forms of learning (Pellegrino & Quellmalz, 2010). For example, the use of digitally mediated portfolios is a good example of how technology is being used to facilitate learner-centred and more authentic assessment that assesses more complex forms of learning with high levels of student satisfaction and motivation (Deneen et al., 2018).

One dimension of assessment is feedback. Research has found that although there is a growing awareness of the value of electronic feedback across the sector, it has been more widely adopted in STEM, Social Sciences and Healthcare. Electronic feedback is still less used in Arts and Humanities, particularly in the former where feedback is still mainly provided in person through *crits*[2] and tutorials (ElShaer et al., 2019).

Before the pandemic, digital exams were almost inexistent or used in face-to-face environments using mainly computer rooms for this effect. Off-campus supervised/non-supervised exams were rare and only used in very specific courses and institutions (Newland, 2018). Within the sector, Newland (2018) has found that digital exams have been used to support "one or two courses", only 20% at a department level and 5% across the institution. Online exams have been mainly delivered using tools from institutional VLEs. Interestingly, academics have been the main drivers for implementing digital exams for reasons such as marking efficiency or accessibility

[2] A '**crit**' (short for critique) is a process of formal analysis or criticism. In art education is a central element of learning and assessment; normally a setting where students prepare a piece of finished work and show it in an "exhibition like" situation.

(Newland, 2018). Multiple-type questions (MCQs) and word processing are the two main types of digital exams. MCQs have been mainly used online as part of the formative assessment usually to provide immediate feedback to students in larger courses.

At this stage, it is important to mention that in the UK, assessment types are approved as part of validation documents and can only be changed when the course is revalidated. That is to say that a module cannot change its assessment regime in an academic year without being revalidated. This validation usually involves stakeholders such as students, industry representatives, and professional, statutory, and regulatory bodies (PSRBs). The external examiner has also the role of checking if module delivery relates to the documentation that was validated.

2.3 The sector responses at the beginning of the pandemic

For the UK HE sector, the national lockdown and the consequent social distancing had a significant impact on how universities work. Although universities had in place their VLEs to support face-to-face learning and teaching, usually as a repository of information, managing communications, and supporting the EMA, as discussed previously, the assessment regime was designed for face-to-face delivery. Exams, presentations, and *crits,* as we already discussed above, were typically done in the classroom or workshop-based environments. Due to the move to remote teaching, universities developed their teaching and assessment approach based on new guidance provided by the UK regulator (Office for Students, 2020) that rapidly provided the structure for innovation. Rather than transposing written assessments to an online environment by moving face-to-face examinations to an online format, the mainstream approach was to adapt the exams to other formats, enabling other online and digital assessment types, provided that learning outcomes were still being fully assessed. Digital examinations were seen by the sector as difficult to implement without proper training, technical support, and considerations around fairness, data protection, equality and accessibility, and robustness. Discussions were held with Proessional and Statutory Regulatory Bodies to conduct exceptional assessment regimes based on online delivery and new assessment elements were developed by course and programme leaders and approved by the university's quality internal procedures.

We will now look at University A in more detail and address how it has strategically developed the adaptation to a new assessment regime by designing a new online teaching and learning project. We are using the framework for Online Learning Sustainability (Casanova & Price, 2018) as a way to both identify areas that could have been better developed, as well as helping academics and universities to reflect on what they could have done differently in their approach.

3. Setting the scene: University A

University A is not very different from other HE institutions in the UK in terms of how it uses learning technologies to support learning and teaching and thus aligns itself with the overview we provided in the section above. University A has around 10.000 students, divided into eight schools, and delivers face-to-face teaching with some online delivery, particularly supported by EMA.

A range of policies has been developed aiming at regulating the assessment process and particularly the EMA. These policies include the academic regulations, which oversight, for example, the conduct of assessment, unconscious bias, mitigation and postponement of assessments, appeals, academic offences (which include academic misconduct and plagiarism), guidelines for online submissions, and marking.

The vast majority of academic staff have a fellowship of the Advance HE[3] which is typically achieved either through attending, with success, a Postgraduate Teaching and Learning Certificate in Higher Education or a combination of training/workshops and a retrospective reflective teaching portfolio (Van der Sluis & Huet, 2021). Evidence of knowledge of assessment and feedback, and learning technologies is an essential component for being recognised as a fellow by the Advance HE scheme - the United Kingdom Professional Standards Framework (UKPSF) (Van der Sluis & Huet, 2021). It is therefore expected that academics have some basic knowledge of best practices around online and digital assessment.

There is a centralised department that supports academic staff with individual queries and staff development opportunities. The support available is both technical and pedagogical, i.e., it can range from setting up a rubric to providing meaningful feedback using an audio system. The department is also responsible for managing the different learning technologies and ensuring that both students and academic staff have a good teaching or learning experience.

Online submissions are a mainstream method of assessment either using the VLE submission tool or Turnitin (Mann, 2016). Yearly, there are more than 100.000 submissions which give an average of around 9 submissions per student per year. Digital exams are seldom used, although the online test/quiz system of the VLE is used for formative assessment in some courses, particularly in STEM.

Performance and art-related work are usually done in face-to-face environments. Large file submissions are either uploaded in cloud-based systems or through Panopto – a software that provides a range of features from lecture recording to screencasting. Feedback is mainly done in Turnitin Grade Mark or the VLE tool although targeting mainly online submissions.

The use of rubrics for marking is subject-based and it was not widely spread. Like other universities in the UK, University A, allows a degree of customisation for each specific school/subject. Formative assessment and feedback are well regarded by senior management, but not as widely disseminated as they should, with few opportunities for students to link learning with previous assessments (Carless, 2019).

4. Sustainability of online and digital feedback

'Sustainable' is defined as 'the ability to continue at a particular level for a period of time' (http://dictionary.cambridge.org), 'able to be maintained at a certain rate or level'

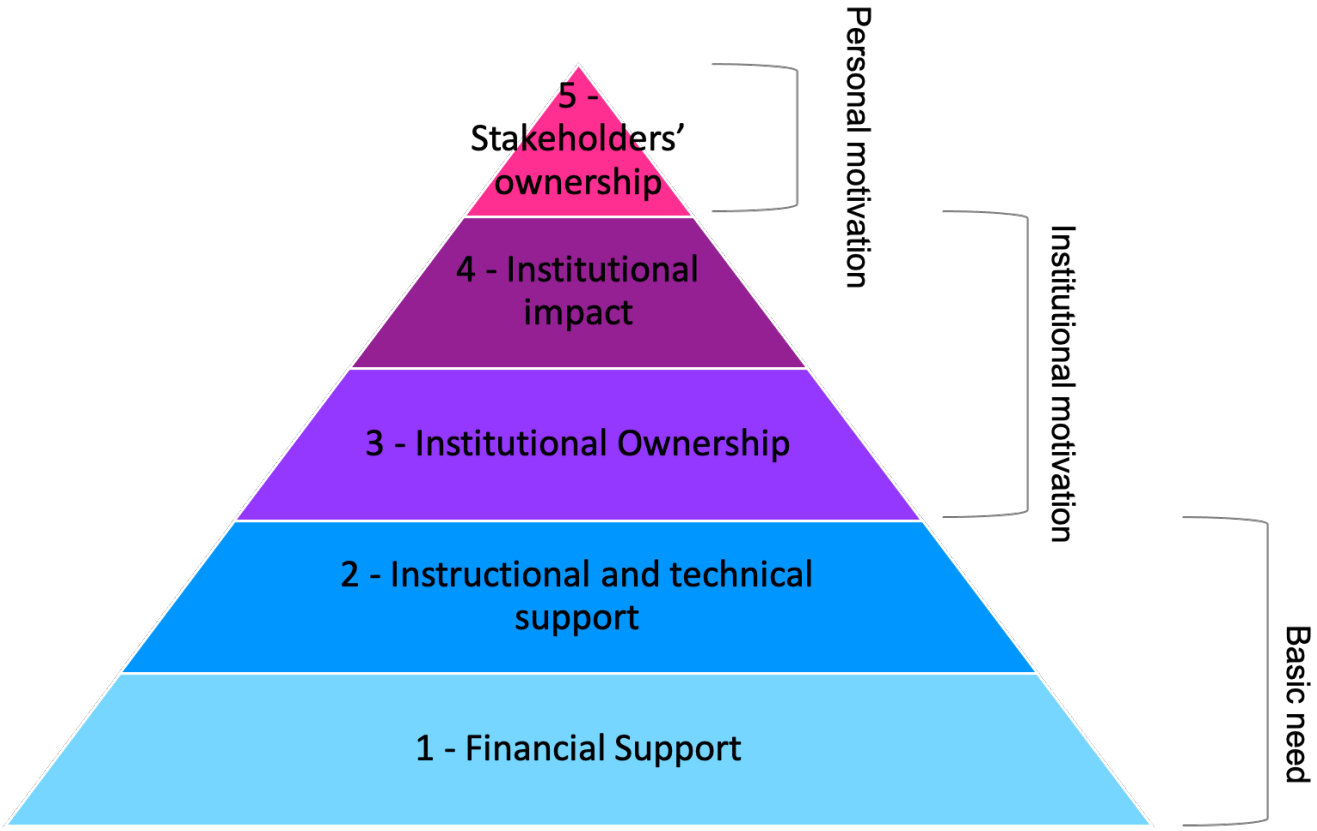
[3] The Advance HE is a sector-owned charity that works with institutions and higher education across the world to improve higher education for staff, students and society. Advance HE provides expertise in higher education with a particular focus on enhancing teaching and learning, effective governance, leadership development and tackling inequalities.

and 'able to be upheld or defended' (https://en.oxforddictionaries.com). While definitions vary, there appears to be a common agreement on continuity over time, implying both permanence and consistency with the same degree of efficacy. Casanova et al. (2018) define sustainability in online learning as the promotion of educational lifelong changes that promote consistent efficacy. The framework for Online Learning Sustainability provides a structure that helps institutions to achieve sustainability in their innovations. This heuristic framework was inspired by Maslow's (1943) hierarchy of needs. Maslow's model depicts a five-level pyramid of human needs. Ascending from the bottom of the pyramid, each level underpins the accomplishment of the next (Maslow, 1943). In short, Maslow advocates that people are motivated to achieve a certain need and that those needs take precedent over the development of others. This five-level model can be divided into deficiency needs and growth needs. The first four levels are often referred to as deficiency needs, and the top level is known as growth needs. Maslow's (1943) hierarchy of needs has been used to support research in different areas, and more recently in the area of online learning (Chew et al., 2008; Giannoni & Tesone, 2003; Milheim, 2012).

The framework introduces each level as a steppingstone that once acquired will lead to the next level. The authors build upon the concept of development from baseline to advanced requirements to achieve sustainable online and digital learning.

Figure 1

Framework for Online Learning Sustainability (Casanova & Price, 2018)



The first cluster is basic needs, divided into financial/funding support (level 1) and instructional and technical support (level 2). The second cluster represents institutional

motivation that includes institutional ownership (level 3) and institutional impact (level 4). The third cluster embodies the personal motivation represented in the framework by the stakeholders' ownership (level 5).

4.1 Level 1 - Financial support

Financial support is an area where UK HE institutions can respond swiftly with a budget increase in the past few years. UK-based reports (Bausili, 2018; Newland, 2018; Newland & Martin, 2016) have been suggesting in the last decade a widespread use of Turnitin, online marking and feedback, and the deployment of digital exams. Investment in digital technologies is paramount to ensure a wide university approach that responds to data protection, information flux, detects academic misconduct, and ensures transparent procedures. University A was well equipped with digital systems to support EMA when the Covid-19 pandemic started. Those included Blackboard (including blackboard collaborate), Turnitin, Panopto, Poll everywhere, and, in a later stage, Zoom. These tools enabled streaming performance with better sound quality than that of Blackboard Collaborate.

Funding to support the transition to online and digital assessment was also provided through human resources allocated to this new project. Human resources included academic developers (specialists in higher education pedagogy), school champions (a senior academic in the school or with expertise in online and digital learning), and members from the quality and registry teams. Thus, we can comfortably agree that in University A the first level was achieved.

4.2 Level 2 - Instructional and technical support

There is considerable research pointing to academic staff lack of pedagogical and technical competencies for online learning and assessment (Blin & Munro, 2008; Taylor & McQuiggan, 2008). Typically, academics' teaching approaches either reflect how they were taught or attempt to replicate face-to-face teaching practices (Englund et al., 2017). This is an obvious constraint regarding the impact of online learning and a setback for real adoption, as academics may be uncomfortable and apathetic to engaging with the process leading to staff anxiety and frustration. A central department that helps with one-to-one support and staff development is crucial for later adoption. Within the UK, such structures exist centrally and, in some universities, also at a school level, where support can be tailored to specific disciplinary needs.

In University A, this support was provided in three different levels. The first level was the traditional help desk support, usually technical, aiming at fixing problems/issues identified by the academic staff.

A second level was through thematic workshops that during the initial stages of the lockdown were designed to respond to specific needs for the remote teaching stage (i.e. setting up an assessment with rubrics; or creating an online test).

A third level was based on the new project created for the 2020-21 academic year that aimed at providing better online learning and assessment experience to students and therefore incorporating better learning design and asynchronous learning opportunities. A new pedagogical model was built based on the three phases: exploring content; practicing/discussing the content and applying/evaluating the content. For the latter part of this model, formative assessment was paramount, as the model dictated that students should be able to self-assess their learning.

As part of this project, a team was created in each school comprising one academic developer, one school champion, and an instructional designer. The team worked with academics within each school before the starting of the academic year to build this new approach. Support was delivered both as part of professional development such as workshops, one-to-one pedagogic consultancy, and instructional design support all of which at school, programme, and course level.

Further support was provided during the lockdown stage to the assessment regime. University A encouraged academics to avoid unseen online exams as they were proved not to be reliant and inclusive. It was found that not all the students had, in their household, sufficient bandwidth, access to webcam and technical knowledge and that more traditional human invigilation was not reliant enough with larger cohorts. Alternatively, suggestions were made for academics to use short essays, open-ended questions and seen exams, where exam questions were launched just before exam time and students would be given a larger period to complete the exam. Randomised question banks exams were not seen as an option due to lack of preparation time (Clark et al., 2020). Senior management and the Quality Office conducted a review of the assessment regimes to ensure that assessments were, in fact, adequate to the learning outcomes expected to be assessed, and academic staff were encouraged to adapt their assessment briefs to meet the required standards. In our view, it is safe to say that pedagogical and technical support was provided by the institution to their academic staff.

4.3 Level 3 - Institutional ownership

Online learning initiatives require institutional ownership to succeed. Ownership needs to transition from the project initiators to the institution to instantiate institutionally-driven support for policies, guidelines, and wider adoption. Rogers (2010) introduced five stages for the implementation of an innovation process in an organization, which he organized in two phases: initiation and implementation. Within initiation, he discusses the importance of agenda-setting in which a particular problem is identified that may result in the need for innovation; and the matching phase, which he labels the moment of aligning the defined problem with the organizational policy and normal day-to-day activities. This is particularly relevant as it is part of the process of creating a sense of relevance.

Within implementation, Rogers (2010) introduced moments of redesigning / restructuring, clarifying, and routinising. The former moments are part of the ownership, where the organization modifies and adapts the innovation to fit its organizational structure. It clarifies the relationship between the organization and the innovation, in essence, through the creation of a new policy that explicitly connects the innovation with the organisational structure.

An example of this could be implementing a new approach for online submission, grading, and feedback. The clarifying moment is the creation of a new policy that stipulates that all submissions will need to be done online through a new tool and based on a single procedure. The final moment is routinising, in which the innovation becomes an ongoing element of the organisation's activities and policies and loses its identity.

With the above example, the practice becomes part of the university's business as usual, and staff will thus perceive it as routine. Whilst during the first stage of the assessment strategy (during the second semester of 2020) one could argue that

University A moved rapidly to the implementation stage, leaving few spaces for the agenda-setting and matching, leaving it to a less sustainable model of implementation; during the second phase (the academic year 2020-21), with the new online delivery project, University A moved across the different stages of Rogers model. The new pedagogical model was developed and presented to the community both by senior management and by the school teams. Special steps were taken to ensure that the different stakeholders perceived the relevance of the alignment between this new pedagogical model and existing university expectations and policies. The university invested in a communication strategy to ensure that all stakeholders were clarified about what was expected as well as a clear strategy to ensure that the creation of online content and assessment was part of the routine. At this stage, one can argue that few universities in the UK were able to fully align to this level. Although initiatives for online and digital assessment exist, there is a degree of flexibility that led staff to manage the institutionalised policies; University A was an exception and both content, activities and assessment were fully aligned to the new pedagogical approach and the new pedagogical model.

4.4 Level 4 - Institutional impact

The ultimate goal of an online learning initiative should be to have an institutional impact (Stepanyan et al., 2013; Trentin, 2007). Impact only manifests itself when there is institutional adoption and when there is, in place, a structure for central, longitudinal data collection for monitoring and evaluating the impact of the initiative. This impact may be a result of changes and improvements of institutional practices, changes in policy and procedures, an increase of students and staff satisfaction, more economically or environmental-friendly practices, or improvement in terms of perception of quality of delivery. Due to the outstanding situation, there has been little evidence of impact and little monitoring and evaluation has been done and published in the UK, at an institutional level. It will be interesting to monitor this process at a later stage, to evaluate whether changing face-to-face assessment practices to online may lead universities to re-evaluate existing and more traditional assessments. However, recent data from the National Students Survey points out to a fall of around 8% in students' satisfaction at a national level in this academic year. University A did have a similar fall in course satisfaction but maintained a similar result in the assessment cluster in comparison with previous years. Although it was expected that Covid brought limitations of access to the Campus and that students would feel isolated and underwhelmed with their overall experience it is important to note that the impact of the changes in assessment had a positive outcome when compared with other areas of the provision and with other UK institutions. We may argue that this result may have been a consequence of the structured approach to online learning that included assessment and specifically formative assessment into the learning design approach.

4.5 Level 5 - Stakeholders' ownership

Stakeholder ownership is a crucial component for engaging staff in the successful sustainable implementation of online learning and assessment. This is the top level of the Casanova and Price model (2018) and it is aligned with Maslow's (1943) last level of self-actualization. This is where academic staff begin building their conceptions and usage of online learning and gradually develop habits and dependencies that ensure its continuation. Stakeholders need to embrace the relevance of online learning and

assessment in their practice and accept ownership by transforming what is provided into their practice (Trentin, 2007). It will be interesting to see whether some academic staff will change their perceptions of online and digital assessment because they found this to be a more appropriate assessment method. The learning barrier has been, in some cases, overtaken and academics are now more familiar and comfortable with these practices. Furthermore, some of the academic staff may be experiencing positive feedback from students.

At the time that we are writing this paper, learning, teaching, and assessment practices are still constrained by Covid and the different social distancing restrictions. We cannot guarantee that all of the assessments traditionally conducted face-to-face, before the pandemic, will be moving permanently online. However, this was certainly an opportunity to rethink the assessment regimes in different programmes and to reflect on the role of assessment in learning. It certainly also allowed academics to become more confident with EMA, both in terms of developing and deploying new forms of assessment and managing the process (giving feedback and marking). The process also enabled students to gradually develop assessment literacies and become more involved with the assessment process and how the university operates (Casanova, et al., 2021).

5. Discussions

Universities were asked, during the pandemic, to adapt to a new set of challenges that they were not fully prepared for. Face-to-face assessments were forced to move to solely online and heavily dependent on educational technologies. Challenges for academic staff were immense (Moreira et al., 2020; Trindade et al., 2020) and they were not fully prepared pedagogically and technologically to make this shift nor they had the time to plan and develop new strategies. Undoubtedly, the UK HE sector was in a good position to move fully to EMA as this shift had started already in the last decade. There were structures in place, policies and guidelines created and a sense of institutional ownership. Looking at Casanova and Price (2018) model there seems to be some clear alignment with the bottom levels of the pyramid, particularly in terms of the levels "Financial Support" and "Instructional and technical support". Universities in the UK have both the required technology as well as a central department that can support academic staff rolling out innovative assessment initiatives. Comparing with the sector in Portugal, one can reflect on whether similar conditions exist. Although systems and infrastructure have been created in most universities and polytechnics, staff development, instructional support, and sustainable investment are still scarce. New investment with the transition to digital practices and new funding programmes under the scope of the "Plano de Recuperação e Resiliência" are important, but they are finite. Similarly, it is important to capitalise on existing investment made during the pandemic, particularly in terms of the creation of new infrastructures, staff development and changes to assessment practices and policies. Those need to be fully embedded into HE business having now more time to involve the education community. In Portugal, recent studies support the idea that there is still some work to be done in terms of structure, support and staff development (Amante et al., 2019; Dias et al., 2015; Ramos & Moreira, 2014).

Universities must decide whether they want to fully invest in EMA or whether they want to return to the normal type of assessments. This will come with the third level of Casanova and Price (2018) model: institutional ownership. Institutions will have to

decide if they fully embrace this new mode of assessment, building from existing practices during the pandemic, and redesigning, clarifying, and routinizing them. For example, making a requirement that written work must be submitted online and that academic staff must provide a mark and feedback to submitted element of assessment; alternatively, moving completely to competency-based assessments rather than the existing exam-based assessments; or even, moving completely to online assessments including developing a strategy for online exams and e-proctoring.

Academic staff, students and institutions endeavours during the last eighteen months, should be nurtured, and appreciated. At a time when society is being transformed by technology, one should question whether there is a rationale to move back to paper and pen assessments. It is important for institutions to measure the impact of the last semesters and to focus on how students perceived their assessments. It is also important to recognise the effort made by academic staff and evaluate their satisfaction and preparedness to continue with such practices. Notwithstanding, only with structural changes institutions will be able to sustainably produce change. It is important that everyone, within the education community, understands, is involved, and owns this process. Only then, we move to the final level of Casanova and Price (2018) model.

6. Conclusions

In this paper, we described how institutions in the UK were forced to change their assessment regimes in consequence of Covid-19 and explored the impact that EMA has on the assessment processes. We used the example of institution A to help readers compare this institution with their own. Furthermore, we provided a framework for Online Learning Sustainability to help frame each level of achievement with existing practices in institution A. This will hopefully help academics and institutions to both reflect on past practices and think about the future of online and digital assessment strategies. We argue in this paper that higher education should be looking at the EMA process more sustainably. We are supported and influenced by a model for online learning sustainability which encourages universities to own technological development by ensuring that it is fully embedded in its procedures and regulations. We believe that Covid-19 opened up an opportunity for the HE sector to change how it is using assessment; and encouraging assessment to be part of the student learning experience, with opportunities for feedback and reflection. We are encouraged by research that recommends moving from traditional examinations to more authentic based assessments (Casanova, et al., 2021; Pereira et al., 2013; Tinoca et al., 2014). This move to online and digital assessment is an excellent driver to encourage academics to reflect how they are assessing and how they can change their assessment regime to encourage more group work, industry-oriented and practical assessments.

7. References

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