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How Can a Technology Enhanced Learning Environment Support Learning-Oriented Assessment in Higher Education?

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Annotation. This study uses a qualitative approach to explore how technology enhanced learning (TEL) contributes to learning-oriented assessment (LOA). The analysis of 9 interviews revealed that a TEL environment may facilitate learning through enabling timely feedback, tracking learning progress, offering innovative and learner-centered assessment methods, and increasing transparency. However, due to a lack of digital assessment competences, teachers may face challenges designing LOA in a TEL environment.

Keywords: *Learning-Oriented Assessment (LOA), Qualitative Research, Semi-structured Interview, Technology En-hanced Learning (TEL) Environment, Technology Enhanced Learning (TEL).*

Introduction

Even though the COVID-19 pandemic has accelerated the digitalization of higher education, the transition to partially or fully online teaching/learning and assessment posed tremendous challenges to all stakeholders (Cirlan & Loukkola, 2021). The European Association for Quality Assurance in Higher Education (ENQA) ran national surveys illustrating that assessment in online studies caused challenges for HE teachers. Often, assessment had simply been transferred from a traditional learning context to a TEL environment without making any adjustments, however this did not work (Zeng et al., 2018), forcing teachers to improvise; combining assessment methods to achieve

satisfactory results (Cirlan & Loukkola, 2021). A common recommendation for assessment in a TEL environment to be efficient in facilitating and enhancing student learning is that it should be well-matched with the objectives of TEL and designed considering the parameters of a TEL environment (Istance & Kools, 2013; Zeng et al., 2018). Thus, a major advantage of online learning assessment activities (as a rule, taking place in TEL environments) can be embedded into learning-supportive, student-centered, and interactive learning design. As a result, learning-oriented assessment (LOA) in a TEL environment, based on formative assessment and assessment for learning (Carless, 2006), may address these problems if its characteristics are applied correctly and it is supported with proper TEL environment solutions (Zeng et al., 2018). Such preparation would have long-term sustainability potential and would serve as HE innovation.

The aim of this research is to reveal *the potential of a TEL environment for LOA*.

The research question is formulated as follows: *What is the potential of a TEL environment to support LOA?*

Learning-Oriented Assessment to Support Learning

LOA is derived from ideas of summative and formative assessment, encompassing features of assessment of, assessment for, and assessment as learning, creating a balance among their similarities and differences (Carless, 2006; 2007; 2015). Researchers highlight two different purposes to apply LOA: first purpose of LOA is to facilitate and enhance the learning process, second purpose is to provide evidence of student's achievements (Carless, 2006). LOA invites learners to reassess learning by stimulating involvement at cognitive and metacognitive levels (Carless, 2015).

(1) *How can LOA facilitate learning progress?*

The facilitation of learning is observed through student's active involvement in practice, based on formative assessment principles. For instance, in LOA, assessment tasks are described as learning tasks, the main goal of which is to keep learners focused on, and engaged in, learning throughout the entire learning period, contrary to summative assessment tasks, which often take place at the end of a semester where the main goal is to benchmark a learner's learning (Carless, 2013a; 2013b). Learning tasks involve self, peer, and teacher assessment, as well as ways to measure progress. Additionally, these tasks provide for interactions with learning materials to foster self-regulated learning. However, methodologically it is difficult to create assessment tasks which focus learners and involve them in a series of metacognitive activities. Consequently, there is still a need to investigate how successful practices from face-to-face environments can be re-designed for a TEL environment.

Another important element for LOA is student engagement (Carless et al., 2006; Carless, 2013a; 2013b), which is observed through participation in peer learning, self-assessment, engagement with assessment criteria, and analysis of good practice (Falchikov, 2005; Liu & Carless, 2006). For instance, self-assessment requires learners to participate in the learning process by creating their learning objectives, choosing adequate learning strategies and techniques, continuously monitoring learning progress, engaging with feedback, familiarizing themselves with assessment criteria, and foreseeing and assessing their learning outcomes (Zeng et al., 2018). Moreover, research suggests a TEL environment prompts students to consider their actions in relation to curriculum, engaging them in metacognitive activities through self-assessment, self-regulated learning, and feedback provision (Wandler & Imbriale, 2015). A TEL environment has the potential to support learning and help learners reach out for help from their peers and teachers to solve any learning, emotional, metacognitive, and administrative problems during their online studies (Collier & Ross, 2017). Fundamental to this approach is that student engagement is necessary for productive learning (Carless, 2007). On the other hand, student engagement was one of the two major challenges, along with assessment in a TEL environment, faced when studies were moved online during the pandemic.

Researchers praise LOA for its potential and emphasis on timely and adequate feedback provision. Carless (2006; 2007; 2015) claims that learners should get adequate feedback to improve their current assignments as well as the upcoming ones, and thus the learning process would be improved. However, feedback can have negative aspects as well. Since feedback in LOA is described as feed-forward, the learner is required to provide closure to feedback which arrive through the feed-forward comments (Carless, 2007). It is not known whether learners perceive these conditions as too strenuous, leading to deterioration of their enthusiasm for learning (Gonzalez Perez & Trevino, 2019).

(2) *How can LOA in a TEL environment improve transparency?*

Student engagement in assessment processes increases transparency (Carless, 2013) and ensures productive learning because students can create a better comprehension of learning objectives, monitor their own performance, and learn more about the criteria for assessment (Carless, 2007; Zeng et al., 2018). This potential of LOA is directly linked with the main principle of technology application in education, namely, introducing transparency to the process of teaching/learning, assessment, as well as TEL curriculum or learning design solutions. Recent studies (Hew, 2016; Rienties et al., 2017) on the data generated by TEL environments discuss the benefits of learning analytics as tools to be used by teachers to monitor student behavior and performance. Teachers need to observe learners' behavior online, to analyze the generated data about learner's learning, to clarify the need for their more active intervention in facilitating discussions and keeping students engaged in achieving the intended learning outcomes (Hew, 2016; Rienties et al., 2017).

A TEL Environment Solutions for LOA

A TEL environment significantly alters teaching/learning, communication, and collaboration; thus, assessment should be changed respectively (Gaytan & McEwen, 2007; Alavi et al., 2021) allowing for different kinds and levels of interaction between teachers, learners, peers, and content (Gikandi et al., 2011). Designing assessment in a TEL environment is more demanding as it requires a specific methodological approach, i.e., constructive alignment, implementation of student-centred approach, following the principles of transparency of assessment (Robles & Braathen, 2002; Alavi et al., 2021). As traditional classroom assessments take place after completion of a particular topic or series of lectures, often carrying a summative aspect, assessment in a TEL environment is integrated within learning design and occurs throughout the entire learning cycle (Dikli, 2003; Robles & Braathen, 2007).

Since a TEL environment enables both synchronous and asynchronous modes of learning (Mueller & Strohmeier, 2011), teachers need to re-design assessment to achieve desired outcomes to offer a fruitful learning experience (Gikandi et al., 2011). Because, in a TEL environment, alignment between assessment techniques and expected proficiencies is necessary for efficient learning and assessment (Liang & Creasy, 2004). Regardless if they are individual or combined, any method for refining assessment in online learning has to pursue the best stages of alignment (Reeves, 2000). Alignment is found when the expression amid learning objectives, learning design, teacher's skills and competencies, technological options, and assessment strategies can be as well-defined as possible. Difficulties can present themselves anytime technology is brought into courses where alignment is missing (Reeves, 2000). Thus, constructive alignment is inevitable for sufficient assessment in a TEL environment.

Discussions centering on assessment in a TEL environment need to be constructed on the features of established and exemplary educational techniques, e.g., encouraging students to reflect; creating motivation to enter the learning environment; showing a commitment to providing support and increased aid; and assigning different and consequential tasks (Gaytan & McEwen, 2007). Since learning/teaching and assessment in a TEL environment adopt a student-centered approach, conventional assessment strategies cannot expose the intricacies of the effects of student-centered online learning which are dissimilar from the overriding, teacher-centered standard, commonly observed in a physical classroom context (Reeves, 2000; Zeng et al., 2018).

In short, a TEL environment produces a set of technical and didactical requirements for designing of LOA. Thus, LOA, set for a traditional classroom, cannot be applied in an online context without making major modifications. Considering technical specifications of a TEL environment, changing interaction channels, adoption of learner-centered approach, and promotion of innovative pedagogies, LOA should be adjusted to fit within learning design and to efficiently use the potential of technologies to facilitate learning.

Methodology

Qualitative Inquiry. Qualitative research is usually done when a complex and very detailed explanation of a phenomenon is required (Creswell, 2007). Since the LOA in a TEL environment has not been thoroughly analyzed (Lunt & Curran, 2010), there is a gap in research which could reveal the potential of a TEL environment to support the development of LOA to facilitate and enhance learning.

Data Collection. Nine semi-structured interviews have been conducted, using an online communication platform, e.g., Zoom. The interview questions are based on the characteristics of LOA, TEL environment specifications and the research questions. A semi-structured interview method has been used as it enables flexibility and allows researchers to react to individual responses (Cohen, Manion, & Morrison, 2018). All the interviews were done in English, then transcribed in a word-by-word manner. Each interview lasted approximately an hour. Prior to the interview, the respondents have received a Plain language statement, which explained all the procedures as well as provided an in-depth explanation of the research, its objectives, also included information of data protection procedures. The interview questions were available for the respondents on demand prior to the scheduled interview date.

Research Participants. The method to determining what material is necessary is to hold discussions with an ingroup until data saturation has been reached (Kvale, 1996). Therefore, a purposeful sampling (criterion sampling) has been applied as a useful strategy to identify and select research participants who are familiar with, or have knowledge and experience of, the phenomenon of study (Creswell & Plano Clark, 2011). The selection criteria included the following:

(1) A respondent is researching in the field of assessment in HE and TEL for at least ten years.
(2) A respondent has prepared at least 20 publications in indexed databases on topics including assessment in HE, LOA, and TEL.
(3) A respondent is internationally recognized expert in the fields of assessment in HE, LOA, and TEL.

The characteristics of the research participants are provided below:

Table 1

Characteristics of Research Participants

Respon-dent No.	Area of Expertise	Years of Experience	Publications in Indexed Databases	Country
R1	Digital assessment, Personalized Learning,	40+	187	Australia
R2	Assessment, LOA	20+	121	China
R3	Assessment, TEL	40+	46	Canada
R4	Digital assessment, E-portfolios	10+	26	Ireland

Respon-dent No.	Area of Expertise	Years of Experience	Publications in Indexed Databases	Country
R5	Assessment, Feedback	40+	203	Australia
R6	Assessment, TEL	30+	53	Lithuania
R7	TEL, Self-Regulated Learning	20+	42	Lithuania
R8	TEL	20+	29	Finland
R9	Assessment, Learning Analytics	30+	109	United Kingdom

Data Analysis Method. An inductive qualitative content analysis (Miles and Huberman, 1994) has been used which allowed establishing a system of the categories and subcategories in a very systematic manner. The collected data was coded in a sentence-by-sentence manner (Priest, Roberts & Woods, 2003), which allowed emphasizing the importance of dominant themes.

Ethics. The research has been organized and carried out, following the research ethics' guidelines and procedures that have been established by the Research Ethics Committee at the Education Academy of the University. Participants' privacy and anonymity and data protection have been ensured. All participants were informed about the purpose of the research in advance. The participation was voluntary, the participants could withdraw at any point.

Findings

The analysis of the transcripts has identified the categories and sub-categories that have provided the answer to research questions by revealing the potential of a TEL environment to facilitation and improvement of LOA as well as identifying the main barriers for successful LOA implementation in a TEL environment.

A TEL Environment may Facilitate and Improve Learning and Assessment

The experts suggest a TEL environment may improve learning and assessment, while the contribution of a TEL environment can be observed through a facilitation of continuous progress monitoring:

R3: Learning-oriented assessment is continuous and dynamic. <…> I would assess the student <…> how they got from where they started to the end point. <…> using the technology, it is much easier for me to track.

The experts agree LOA is associated with continuous measurement of student learning throughout the learning period, while a TEL environment is seen as a facilitator enabling learning monitoring. Experts suggest learning progress monitoring in a TEL environment

is a very organic process as teachers can easily employ various technological solutions to monitor every student's step without having to take any specific interventions.

The study suggests a TEL environment has the potential for facilitating peer learning and feedback. Assessment needs to be designed so that it supports learning. The experts agree that a TEL environment and other internal or external, yet compatible tools can be used to support or / and enable peer learning. As the research indicated, a TEL environment may be used to manage peer learning and peer feedback.

Besides, LOA in a TEL environment may help to develop student's understanding, which may then lead to increased engagement with learning and assessment:

R1: It isn't good enough that the assessment nearly measures learning. <…> it needs to have a positive effect on learning.

R7: Teaching must be tuned [to] foster student autonomy in learning. <…> Teaching moves on to another level <…> to help the students to learn rather than to teach them.

The research suggests LOA relies on student autonomy, thus, assessment should be designed and implemented accordingly, while a TEL environment is seen as facilitator. Assessment strategy should be designed to support and foster development of student autonomy, while a TEL environment and its tools should be used to support the implementation of adequate assessment methods that would help students become independent learners.

Besides, the research illustrates a TEL environment may alleviate implementation of a learner-centered approach, vital for LOA and facilitate development of student autonomy and self-regulation:

R7: It has to be really shifting from teacher-centered learning towards student-centered learning so that the students really learn, and teaching should be aligned to learning so to make students more and more self-regulated, more and more autonomous. <…> And technology allows that alignment.

A TEL environment may require pro-active student involvement into learning and LOA, whereas teachers should take a passive role of moderators. The experts believe that the shift in teacher's role in teaching/learning and assessment is inevitable as teachers should be stepping aside, allowing students to take more control and responsibilities of their learning. A TEL environment enables teachers to monitor student learning, from distance, providing students with a sensation of being in charge of own learning.

A TEL Environment may Innovate and Facilitate LOA

The research has revealed a TEL environment may offer innovations to facilitate LOA, as for instance, it has the potential to track learning, enabling timely interactions:

R4: Learning analytics to monitor, <…> to track student's, maybe, disengaging, dropping out, not submitting assessments, not logging into the platform.

Thus, a TEL environment can provide teachers with opportunities to monitor teaching/learning and assessment. As all procedures related with teaching/learning and assessment are arranged online, teachers have a possibility to constantly monitor student's learning progress, even without students have any knowledge about it. Finally, the research suggests learning analytics data may be useful when making decisions regarding any pedagogic interventions based on students' learning behaviors.

As indicated in research literature (Collier & Ross, 2017), learners in a TEL environment require more reinforcement and attention to keep them motivated and engaged. Fortunately, integration of technology addresses this issue by introducing new ways of feedback provision. Indeed, experts agree a TEL environment may create opportunities for personalized audio and/or video feedback provision, which can be appealing for both teachers and learners as it saves time and accommodates the desire of interaction in an online context. Also, the usage of a TEL environment or external communication tools for feedback provision may significantly contribute to facilitation and enhancement of learning. Nonetheless, the key here is whether and how students engage with the received feedback, as the role of TEL environment tools is to support feedback provision from a technical point-of-view by offering timely and interactive ways to exchange feedback between all stakeholders.

Moreover, the research suggested that implementation of technology may reduce a teacher's workload and save their time, allowing teachers to re-focus on issues that are relevant for students at a given time. The experts praise technology as it enables automatization, thus, teachers may have more time perform assessment at more complex level such as quality of thinking, while assessment at more simplistic level, e.g., content knowledge level, can be performed by the computerized algorithms, as a result, saving teacher's time and reducing their workload. The same applies for feedback provisions, as experts noted feedback can also be automated, thus students can receive quality feedback in a relatively short amount of time.

Additionally, the research has suggested a TEL environment may improve transparency through digital tracing:

R3: We were able to go through the learning management system and what the trace of the students working there and that really helped us to decide whether the assessment had been fair or not because we had a record of much more detailed record of the students work.

Besides, the experts agree that using a TEL environment tools, teachers can indicate learning outcomes and assessment criteria and link them to assessment tasks, which makes assessment more transparent. In meantime, transparency of assessment is considered as a required condition to establish trustworthy teaching/learning and assessing culture.

Furthermore, the experts suggest that technology could be useful for predicting learner's behavior through learning analytics, consequently, being able to predict students'

learning, teachers are empowered to take action to prevent undesired learning behaviors such as cheating on tests, plagiarizing, disengaging, or outcomes, leading to facilitation of learning process:

R1: The simplest example is the one success of learning analytics. <…> that success is in predicting schemes that are vulnerable, students of risk of failure.

The technology can signal teachers about a student's struggles are in their learning process, allowing teachers to prepare and make pedagogic interventions accordingly.

Besides, the experts say that with the help of a TEL environment self- and peer assessment may be enhanced:

R7: Self-assessment and peer assessment are very effective tools to help them to learn. And technology really helps to design and implement these activities. Technology makes it work.

Such practices may enhance student learning and foster development of collaborative learning, critical thinking skills, and evaluative competencies. Also, this may result in increased learners' engagement level in learning and assessment.

However, the research has indicated a TEL environment requires constructive alignment between assessment strategy and learning outcomes for LOA to be efficient in facilitating learning. Experts emphasize the necessity to see teaching/learning and assessment as an indivisible whole. There is a need to ensure and maintain constructive alignment between assessment and learning outcomes prior selection of technological elements to support implementation of the preferred teaching/learning and assessment strategy. To put that in other words, the strategy comes first, then there is a selection of tools to support the strategy. Even though technologies may open endless opportunities for designing LOA, a TEL environment, however, should still be considered as an auxiliary element, while the main emphasis should lay on a didactic approach, and learning design and assessment that should complement one another.

A TEL Environment May Pose Challenges for Teachers

A TEL environment may introduce some undeniable challenges for teachers, and in such way making learning and assessment processes difficult. First, implementation of learning technologies for LOA may be problematic as teachers may lack digital assessment competencies for designing courses online, monitoring learning, and performing assessment in a TEL environment. This has moved to the center of attention in the context of the pandemic, when a lot of courses had to be switched online:

R7: Knowing the purposes, understanding how the tool works. So, you have to know not only how the tool works, you have to have knowledge about those tools, but you have to have the practical skills of implementing those tools and then checking how they work <…>. Today's situation showed that everything depends on how much experience the teacher had

before completely switching onto online teaching and online learning. So, the more expe-
rience you had, the better you were when you had completely switched from face-to-face
teaching and learning situations.

As a result, teachers are expected to demonstrate a certain skillset to manage learning and assessment in a TEL environment. The findings suggest teachers should know the tools and their functionality to be able to use them efficiently, otherwise they will not be able to benefit from the technologies. Consequently, teachers' incapability to develop and implement assessment online may have a detrimental effect on learning.

Besides, experts indicate teachers should hold certain attitudes towards technological and pedagogical innovations, i.e., teachers should be open to teaching and learning innovations. If the teacher holds more conservative views to learning/teaching and assessing, they may face challenges in switching to innovative pedagogic modes, as they may resist changing their teaching and assessment methods, where the teacher's role is central. Teachers should become innovators and leaders who inspire their students to study online. The experts suggest teachers should realize the potential of technologies for learning/teaching and assessment and be willing to adopt them to facilitate learning. Experts claim that teachers should resist current trends, which are coming from the learning technology developers, and focus instead on pedagogical approaches, and then consider the appropriate technological solutions to support their chosen strategies, in such a way demonstrating their leadership as educators to manage teaching/learning and assessment and not trying to follow every new emerging technological trend.

In the meantime, a TEL environment may cause some problems for teachers, as its limited technical capabilities may restrict teachers in developing learning design, implementing assessment strategy, and monitoring the learning process:

R8: *Sometimes you can feel limited when you can't create a test in a certain way. But it's not teacher's responsibility or fault. It's not that teacher is not capable to do that, it's the technology that's limiting. Sometimes tools aren't as good, as developed as we'd like them to be.*

Indeed, experts expressed the concern that sometimes a TEL environment cannot accommodate preferred pedagogical solutions as its technical parameters are undeveloped. Experts agree that difficulties in setting-up or adapting a TEL environment for learning/teaching and assessment may evolve into further problems, related to time-management and financial resources.

The research has also suggested that preparation for assessment in a TEL environment may be rather time-consuming. However, the experts note time investment into preparation for assessment in a TEL environment may not be significant when looking at it from a long-term perspective, because once a teacher designs and integrates assessment strategy online with proper methods and tools, they can adapt it later to suit changing needs without having to re-do everything.

Finally, the findings have expressed a concern that teachers may lack good practice examples and institutional support, especially when it comes to solving ethical problems of LOA in a TEL environment. Experts emphasize the threats related to the process of collecting students and their learning behaviours in a TEL environment:

R3: *Assessing students <…> at home, lot of instructors have wanted to use technology like proctoring systems with cameras to observe what the student are doing in their own home, and I think there are big ethical issues with that.*

Some ethical issues may occur when students are misinformed, or the collected data are used inappropriately. Also, some experts believe that a TEL environment enabled proctoring is unethical because it is associated with intruding on a student's privacy. Proctoring may have a negative effect on teaching/learning and assessment, students' engagement, and motivation as it creates a distrustful environment and causes unwelcome tensions.

Discussion

The findings suggest that a TEL environment creates added value to LOA, however, the success of implementation of LOA in a TEL environment largely depends on a teacher's digital competencies. In other words, technologies on their own cannot be considered as a key to facilitate and enhance student learning and assessment. Pedagogy needs to be revisited and technological solutions adjusted accordingly. As the research findings have suggested, new challenges introduced with the advent of online learning/teaching and assessment finally generated more responsibilities and obligations for HE teachers who need to design courses online and require excellent digital competencies. Most teachers, however, seem to be lacking them (Sánchez-Cruzado et al., 2021). When it comes to constructing learning designs and adequate assessment strategies in a TEL environment, particular attention should be paid to teacher digital competencies (Redecker, 2017). The concept of teachers' digital competencies itself is complex as it encompasses a wide range of abilities, competencies, and knowledge (Redecker, 2017). Having insufficient level of digital competence may lead to learning design solutions which do not take full advantages from technologies when developing LOA in a TEL environment. Scholars (Gallardo-Echenique et al., 2015; Redecker, 2017) emphasize the need for teachers to continually improve their digital competencies, to keep investigating the latest tools and their didactical characteristics, and to maintain their proficiencies in order to be able to use state-of-the-art advancements to produce inventive instructional approaches and tactics. Thus, development and keeping up-to-date digital competencies for teachers is a required precondition for efficient organization and management of teaching/learning and assessment in a TEL environment.

As indicated by the experts, working in a TEL environment demands a change in the teacher's mindset since, they note, the common perception among teachers to learning technologies, and online learning in general, continued to be rather negative, as TEL is often considered to be incapable of providing and maintaining high-quality education in comparison to face-to-face learning. Holding conservative attitudes towards learning technologies may have a detrimental effect on the efficient designing and implementation of teaching/learning and assessing in a TEL environment. In fact, this research confirms the work of Naveh et al. (2010) about the need for a general attitude change, showing that conservative teaching or teacher-centered approaches can no longer be an option in online learning and assessment, as a TEL environment, by its nature, is designed to promote a learner-centered approach.

Even though pedagogical approaches in a TEL environment may seem similar to face-to-face contexts, their implementation, as well as a teacher's role and responsibilities, are quite different (Goldstein & Behuniak, 2012; Alavi et al., 2021). This research suggests teachers should be trained to design and implement proper assessment strategies in a TEL environment that would indeed create deep learning opportunities for students. In fact, teachers should acknowledge the changing role of the educator and be open to innovative approaches to teaching/learning and assessment in a TEL environment. A teacher's main function is to provide guidance and support for students rather than being key moderators. The development of teacher digital competencies can enable such understanding and increase flexibility (Redecker, 2017). As previous research by Hermans et al. (2008) indicated, teachers supporting a learner-centered approach to teaching and learning are more likely to use technologies and express a more positive attitude towards teaching/learning and assessment in a TEL environment, whereas teachers holding a more teacher-centered approach have a negative attitude towards the use of learning technologies for the purpose of teaching/learning and assessment coincides with the current findings.

In short, these research findings have illustrated the potential of a TEL environment to support LOA and its potential to facilitate learning processes by fostering autonomous and self-regulated learning and enhancing interactive peer learning. As the findings have shown, a TEL environment equips teachers with tools for tracking and monitoring student learning progress, enables interactive and timely exchanges between teachers and students as well as between students and their peers, and supports learner-centeredness. However, there are several other factors which have direct influence on the success of the process. As this research has demonstrated, the lack of teacher's digital competencies may create a barrier for designing proper assessment in a TEL environment, therefore, there is still a need to pay more attention to the expansion of teachers' digital competencies.

Conclusions

A TEL environment may support designing LOA and, in that way, contribute to improving teaching/learning, and assessment. Technologies indeed can provide both, teachers, and students, with a means for monitoring and tracking learning progress, enabling implementation of innovative and learner-centered assessment methods, increase the transparency, and innovates and facilitates assessment. In addition, a TEL environment may offer a number of benefits and support for teachers by saving resources, reducing workload and enabling easier and timely feedback provision. Nevertheless, due to insufficient knowledge of tools and/or issues, related to their application, and level of skills and competencies to achieve the intended effects, teachers may face challenges to LOA in a TEL environment. However, most of these challenges can be addressed by focusing on the development and maintaining of teacher's digital competencies.

Finally, the research findings highlighted challenges for teachers and other stakeholders that need to be taken into consideration while planning long-term methodological changes in online studies in HE. Further research is evidently needed to rethink the potential of LOA to be applied in a TEL environment, which, in turn, strengthens the characteristics and the purposes of the application of LOA. This research also calls for new practices in HE when LOA is applied in a TEL environment to renew the discussion of whether LOA always supports formative assessment, or whether it may be further expanded to accumulative assessment practices and what kind of data-based evidence may support that.

Acknowledgements

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Kaip technologijomis grindžiama mokymosi aplinka gali padėti į mokymąsi orientuotam vertinimui aukštajame moksle

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Santrauka

Nors esama tyrimais grįstų rekomendacijų permąstyti vertinimo metodiką prieš perkeliant ją į technologijomis grindžiamą mokymo(si) aplinką, aukštojo mokslo praktika pandeminiu laikotarpiu parodė, kad metodinis pasirengimas projektuoti ir įgyvendinti į mokymąsi orientuotą vertinimą nuotolinėse studijose buvo nepakankamas. Taikant kokybinio tyrimo metodologiją, šiame darbe nagrinėjamas technologijomis grindžiamos mokymo(si) (TGM) aplinkos potencialas įgyvendinant į mokymą(si) orientuoto vertinimo strategiją. Tyrime nagrinėjama, kaip TGM

aplinka gali prisidėti prie mokymosi proceso gerinimo įgyvendinant į mokymąsi orientuotą vertinimą ir su kokiais iššūkiais dėstytojai gali susidurti kurdami šią vertinimo strategiją TGM aplinkoje.

Tyrimo išvados atskleidė TGM aplinkos potencialą, prisidedant prie mokymosi proceso gerinimo. TGM aplinka siūlo įvairius technologinius sprendimus į mokymą(si) orientuoto vertinimo strategijai įgyvendinti, tačiau šios vertinimo strategijos įgyvendinimas TGM aplinkoje gali kelti iššūkių dėstytojams, ypač tiems, kurie laikosi į mokytoją orientuoto požiūrio į mokymą(si) ir vertinimą arba stokoja skaitmeninių vertinimo kompetencijų.