

STUDENT PERFORMANCE ASSESSMENT IN ONLINE LEARNING ENVIRONMENT

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Abstract. *The importance, traits, and methods of assessment in an online context are highlighted in this paper's discussion of assessment as an essential component of teaching. The paper aims to provide teachers with a comprehensive overview of the fundamentals, features, and methodologies of online assessment while also emphasizing the need for ongoing efforts to raise teachers' professional competence in order to ensure their successful integration into contemporary educational processes. The research sample comprises of pertinent literature that was gathered on the Google Academic and ResearchGate platforms, most of which is foreign due to the scarcity of studies on this topic in Serbia. Approximately 20 years' worth of publications have been chosen, taking into account the topic's current relevance. This paper was prepared largely with the aim of giving teachers more knowledge, influencing awareness-raising, and removing hurdles that teachers frequently have when it comes to online assessment. It was written utilizing the technique of content analysis. Since the past has demonstrated that the educational system is not immune to social difficulties, it is advised that teachers accept online assessment as a substitute for traditional methods of assessment and become familiar with its significance and potential implementation strategies.*

Key words: *student performance, online environment, online assessment, online assessment techniques, teacher*

1. INTRODUCTION

One of the five crucial steps in the teaching and learning process, student performance assessment, creates a connection between teachers, institutional policies, and disciplinary procedures and student needs (Hodgson & Watts, 2016). The assessment of the intended

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outcomes of the teaching process should be prepared and begun concurrently with the teaching, and preferably before that, even if it is typically anticipated that this will happen after the end of the implementation of instruction. Before the teaching process is put into action, the assessment process should start by evaluating the available materials as well as the students' prior knowledge and skills in relation to a particular teaching unit. The ability to create and carry out the teaching process using appropriate methods and approaches would be made possible by this insight into the student's prior knowledge. The assessment of student achievement, according to the authors (Saputra & Hidayani, 2021), is "an integral part of the teaching and learning process in both conventional and distance education contexts" and serves as a gauge of students' progress toward meeting predetermined educational goals (Ogange et al., 2018, p. 29). Education is no longer just restricted to the classroom; instead, online learning has emerged as the new pillar of education (Idrizi et al., 2021). Even though online learning which started to be used in 2020 represented a great challenge for both students and teachers, it turned out that learning in an online environment facilitates continuous evaluation, enables automatic and quick correction of shortcomings, and timely direction of the further course of the learning process (Almeida & Monteiro, 2021). The online learning environment provides tasks for written and spoken communication, cooperation, and teamwork with the option of employing various means of expression through visualization, multimedia presentation, audio, and video resources, in addition to real-world, everyday skills (McLoughlin, 2006). The online learning environment increases student engagement, promotes quick feedback, offers flexibility in terms of time and location, and cuts down on the amount of time needed for administrative and assessment duties (Baleni, 2015). Students are expected to be self-disciplined and motivated to learn via discovery in order to take advantage of the ease and flexibility that the online environment offers (Robles & Braathen, 2002). To sustain the pedagogical potential of contemporary, online teaching, teachers, on the other hand, consider the advantages of the online environment for learning outcomes while using proper teaching methods and new technology. When comparing learning and teaching in an online setting to learning and teaching in a traditional context, there are differences in interaction, communication, learning paradigms, and assessment methodologies. According to Robles and Braathen (2002), altering how the teaching process was carried out also required altering how teaching efforts and student progress were evaluated.

Numerous studies confirm the lack of preparation and uncertainty among teachers when it comes to evaluating student achievement in an online setting (Musdulifah et al., 2022; Lopes & Soares, 2022; Rahman et al., 2022; Syam & Jumiati, 2022; Sambell et al., 2019). We may also concur that the necessity for best practices for evaluation in the online context is clearly increasing (Baleni, 2015). Existing research demonstrates that teachers were very concerned when deciding how to assess student work. Although they frequently used the traditional method – paper and pencil – while securing and adhering to the established standards, there were times when it was preferable to evaluate students virtually, without having them present.

Online evaluation goes beyond testing and evaluation. The teacher must modify and enhance assessment methods and activities for the sake of efficient evaluation in the online environment in order to give students useful feedback (Robles & Braathen, 2002). All of the above leads to the idea that, in the event that the teaching staff once again has the opportunity to implement the teaching process using digital technologies, online assessment should be presented in one location with all of its features, potentials, as well

as recommendations for its successful implementation. Although we don't anticipate facing the same difficulties as in 2020, when classes were held entirely online due to the Covid-19 pandemic, it will be beneficial to be ready and have everything we discuss in this article on hand as a reference and a backup plan.

The basis for new types of assessment is found in constructivism, i.e., the constructivist approach to learning, according to which "knowledge is created by the activity of the learner and the learning process consists in the (re)organization of schemas with which the learner represents certain elements in his physical and social environment". In order for this learning model to be applied in practice, it is important to promote the formation of new concepts or constructs in students that are linked to previously assumed schemas and integrated into complex structures based on students' cognitive activity and their practical experiences and actions. As students acquire and "construct" their own knowledge, teachers should merely guide and direct them in this process. It is the teacher's task to provide students with the necessary sources of information and other materials with which they construct their knowledge through their own activity" (Glušac, 2012, p. 18).

A constructivist view of assessment can be applied to online assessment in particular, as it does not measure reproductive knowledge, which is often assessed in examination situations, but focuses on higher mental functions and writing portfolios, essays, making projects, models, and other independent work.

2. EVALUATION OF STUDENT PERFORMANCE: IMPORTANCE AND DEFINITION

Assessment of student performance involves a systematic review of activities, regular assessment, and timely feedback with the goal of measuring and verifying student results in the educational process (Lopes & Soares, 2022; Ragupathi, 2020; Sambell et al., 2019). It indicates that both the student and the teacher, who is acting as the assessor, must take responsibility and put forth constant effort. The right evaluation method is essential for a student's learning, teaching, and overall personality development (Kharil & Mokshein, 2017). According to Sambell, Brown, and Race (2019), assessments for teachers should be appropriate, valid, trustworthy, inclusive, and manageable, while for students they should serve as a significant source of motivation and a catalyst for future learning (Mate & Weidenhofer, 2021). Assessment of student performance is a complex task that includes the approach and consideration of three key components: self-assessment of achievement by students; measuring learning objectives; and interaction and feedback between students and teachers (Musdulifah et al., 2022; Robles & Braathen, 2002).

Certain authors (Orsmond et al., 2002 according to Sambell, Brown & Race, 2019) advise specific tasks so that the teacher can successfully give feedback and assess the student's achievement:

1. Give the pupils spoken feedback during the lecture, pointing out any flaws or errors they are making right now. This would allow for an intervention and have an impact on error prevention and prompt correction. We may also add that it would be beneficial to record or note faults that occur inside a specific teaching unit. If we were to teach the same lesson online to a later generation of students, it would be a good idea to keep the notes and make them available so that any mistakes that were made might be avoided in the future.

2. Reporting on finished assignment and distributing it to the students electronically after class.
3. Utilize worksheets where it would be beneficial to include the evaluation criteria.

In order to prevent simple content reproduction, insufficient access to content, and uncritical use of knowledge and available data, assessment criteria should be constructively matched with prescribed learning objectives (Sambell, Brown & Race, 2019). The aforementioned can be accomplished by adhering to the standards of quality evaluation:

1. Assessment needs to be clearly connected to learning objectives.
2. Use of different evaluation methods.
3. To gauge student development in the course of learning, the teacher should use diagnostic, formative, and summative assessment procedures.
4. The learning objectives, evaluation criteria and scoring method should be transparent for students.
5. The teacher should provide continuous feedback based on formative assessment to help students fill learning gaps.
6. Students should be given the opportunity to reflect on their learning and self-assess their own progress (Orlando, 2011, p. 28).

In this section of the paper, the features of assessment are emphasized as a crucial step in the teaching process that not only offers insight into the efficacy of what has been done but also serves as a guide for creating new lesson plans. Due to the uniqueness of assessment in the online setting, we outline the features of online assessment in the sections that follow, beginning with the characteristics of traditional evaluation.

3. FEATURES OF STUDENT PERFORMANCE EVALUATION IN AN ONLINE SETTING

While online assessments also use multimedia, audio, video, and animations, traditional assessments of student achievement primarily use paper and pencil (Westhuizen, 2016). For both traditional and online assessment, the objective, purpose, and components are essentially the same. Every component of traditional assessment is included in online assessment, and the use of contemporary technologies enhances the approaches and strategies that can be applied during online assessment. Online assessment is based on traditional assessment approaches for formative, summative, and diagnostic assessments, while it is facilitated with digital technologies that are employed in the development, storage, and dissemination of assignments to assess student accomplishment (Villiers et al., 2016). Therefore, online evaluation can be carried out using a variety of contemporary devices (computers, laptops, mobile phones) using text-based or multimedia documents as well as complex game simulations (Musdulifah et al., 2022; Kharil & Mokshein, 2017). It is evident that online assessment, quite expectedly, has a big role in the digitization of education (Kundu, 2021), regardless of the stated goal of online assessment, it should be primarily pedagogical, not technological, which means that digital technology should be put in the service of pedagogy in this case (Pedersen et al., 2012).

The requirements and tasks students are given online must be explained fully and clearly, and students must receive timely, accurate feedback (Diarsini et al., 2022; Mate & Weidenhofer, 2021; Gaytan & McEwen, 2007). Numerous methods can be used, including online tests, surveys, participation in online games, forum posts, multiple-choice questions, essay writing, and the capacity to connect different pieces of information and utilize them to address problems in the real world (Lopes & Soares, 2022). All forms of

assessment conducted online share the potential for increased student motivation and a certain amount of fun, which not only improves the assessment's outcome but also lessens the discomfort that students frequently experience when checking and evaluating their performance during the learning process.

Asynchronous and synchronous online assessment options are available, and synchronous online assessment requires less time for risk management than asynchronous online assessment does (Pedersen et al., 2012). While asynchronous learning involves the sequential activities of teachers and students, synchronous learning in an online environment involves the simultaneous presence of teachers and students in an online classroom (Robles & Braathen, 2002).

Although we have already mentioned some of the positive features of online assessment, but the advantages that the author (Westhuizen, 2016) singles out can particularly facilitate assessment in an online setting:

1. Test items can be randomized, so that students do not receive tests with the same order of questions.
2. The provided answers to multiple-choice questions might be presented in a different order.
3. Test items can be ordered by difficulty level.
4. The distribution of different assignment groups to various students can be done using test sets.
5. Automatic evaluation of some of the assignments lessens the teacher's workload.
6. Online tools can provide instant feedback to students.
7. Item analysis can be done using online tools, which can aid the examiner in spotting badly written assignments and questions.

When developing assessment methods for each topic, online assessment offers flexibility. It enables students to take exams or answer questions when it is convenient for them, and it offers the chance for peer interaction and collaboration through online discussions, self-checking, and peer assessment of individual and group work (Ragupathi, 2020).

In contrast to traditional evaluation, online assessment uses contemporary, digital technologies. But regardless of digital technologies as a mediating tool, assessment in an online environment can be diagnostic, formative or summative. In addition to these benefits, using digital tools for evaluation gives teachers immediate access to student work and accomplishments, while also giving students quick and accurate feedback (Lopes & Soares, 2022). teaching process and student progress makes online assessment unique.

4. ONLINE ASSESSMENT TECHNIQUES

Software platforms support techniques that can be employed in online assessment (Villiers et al., 2016). A teacher has a variety of alternatives and methods at their disposal to evaluate student performance online (Ragupathi, 2020). These assessment techniques must support the creation of realistic learning scenarios, the alignment of learning objectives with actual circumstances, the use of software for teaching, the accessibility of teachers, and the provision of support and assistance during learning if they are to be effective (Boyle et al., 2003).

Online evaluation methods abound in the related literature. By examining and differentiating each technique's traits, we can find that all of them share the use of digital technologies to mediate communication between instructors and students.

The use of multiple-choice questions that include identifying the problem and its solutions is the first method mentioned. Since this is the most typical form of online evaluation, it is crucial to create questions that will be simple to answer later. Writing abilities are not evaluated in this situation, which is a mitigating factor if one of the pupils writes in a different language. Because the teacher creates the questions and the suggested answers, there is a thread of subjectivity present that makes it difficult to consider this type of assessment to be completely objective. Only one of the possible answers to a question of this type, which should be brief and clearly phrased, is correct (Dominguez-Figaredo et al., 2022; Lopes & Soares, 2022; Ragupathi, 2020; Ogange et al., 2018; Stansfield et al., 2004; vd Westhuizen, 2016).

Questions that require the student to classify the provided response as either true or false. In this instance, the student has a 50% probability of accidentally guessing the right response. By requesting an additional justification for the selected response, this flaw can be fixed (Ragupathi, 2020; Ogange et al., 2018; vd Westhuizen, 2016; Benson, 2010).

The most typical short-answer questions are those with blanks to fill in. As an answer to a question, the student types in a word or phrase. This scoring method has the benefit that answers can be scored right away by comparing the received answer to a previously prepared answer. The shortage of this kind of question could be the result of a typographical or spelling error, in which case even the right response would be flagged as incorrect (Ragupathi, 2020; Ogange et al., 2018; vd Westhuizen, 2016).

The use of essay questions is indisputable when it comes to qualitative assessment. The student reflects on his beliefs while also demonstrating knowledge and expertise in the subject matter by responding to a given question. This method of assessment is useful when assessing higher-order learning skills, bearing in mind the greater likelihood of subjectivity when evaluating answers (Lopes & Soares, 2022; Ragupathi, 2020; Ogange et al., 2018; vd Westhuizen, 2016).

In an online setting, self- and peer-evaluation are related assessment techniques. Questions with brief and direct replies that foster a deeper approach to learning and encourage the student to reflect on what he has learned comprise self-assessment. It entails completing a self-evaluation diary and reflecting on whether and how well they were able to solve problems as a type of online assessment. Students in this situation must take initiative and autonomously track on their progress. Following the self-evaluation, it is possible to determine whether the student's individual contribution is important for the development of the group or team. In this case, the peer assessment is added to the student's self-evaluation score (Benson, 2010; Gaytan & McEwen, 2007; McLoughlin, 2006; Robles & Braathen, 2002). The authors (Robles & Braathen, 2002) stressed that, in addition to the teacher, students themselves play an extraordinary role in assessing accomplishment even twenty years ago. They considered self-assessment as a crucial part of the learning process in the online setting. With the help of this approach, pupils can determine if they have met the predetermined objectives or whether they need to revisit the material and carry out the same tasks again.

The use of evaluation tables, preferably in the form of a straightforward checklist. Although it takes the teacher more time and effort to prepare the questions, this method of assessment is quick and easy. It is advisable to familiarize the students with the structure of this grading technique and the process for assessing the submitted responses before implementing this strategy (Rahman et al., 2022; Villiers et al., 2016).

Students are accustomed to using digital devices and are comfortable posting to forums and blogs. This is one of the online assessment strategies that makes it possible to gauge students' interest in a certain subject. While working to complete a task or solve a problem, the student applies critical thinking by writing posts and blogs (Lopes & Soares, 2022; Ogange et al., 2018; Villiers et al., 2016; Westhuizen, 2016; Gikandi et al., 2011). In contrast to a face-to-face discussion, students can give more open-minded and truthful assessments and responses in this situation.

A student's work is arranged and presented in an electronic portfolio as part of an online evaluation strategy to show that the student has learned the material and has improved over time. Teachers can better understand student achievement while students can obtain a deeper comprehension of the topic thanks to portfolios. Images, audio, and video can be included. The ability to include diverse elements that give a more accurate image of the student's work is the electronic portfolio's key advantage (Dominguez-Figaredo et al., 2022; Ogange et al., 2018; Villiers, Scott-Kennel & Larke, 2016; vd Westhuizen, 2016; Gikandi et al., 2011; Benson, 2010; Gaytan & McEwen, 2007).

Activities structured on the basis of play, frequently with competitive qualities, are included in game-like activities as an online assessment tool. These activities are a good predictor of the true status of student achievement. They serve as both a stimulating opportunity for students to evaluate their progress and a secure, imaginative, and innovative setting where they can experiment, work together, and solve problems (Lopes & Soares, 2022; vd Westhuizen, 2016). The elimination of anxiety and assessment-related fear is a benefit of using this technique for online evaluation.

The presentation as a method of online evaluation entails seeing and evaluating the student's work and effort, comprehension of the material delivered by the student during the presentation, and creativity (Rahman et al., 2022; Villiers et al., 2016). The student exhibits a variety of abilities when giving a presentation, including the level of knowledge, his work experience with digital technologies, his creativity, originality, and independence.

When used as an assessment approach in an online setting, virtual or online conversation offers an advantage over face-to-face discussion in terms of removing the anxiety associated with public speaking. Online discussion's asynchrony feature allows students additional time to consider comments. Students may be requested to remark on a discussion of a particular topic, and those comments may then be assessed online using checklists, which would constitute formative evaluation in this instance. Students can then be given assignments to discuss online, and by keeping an eye on the level and quality of their discussions, it will be feasible to assess how well the students are understanding the material and how they think. The hardest task in this situation is coming up with meaningful discussion topics and assignments. The questions should be relevant to the material but also prompt further investigation and higher order thinking from the learner (Villiers et al., 2016; Orlando, 2011; Benson, 2010).

Based on the chosen online evaluation strategies, we may conclude that this type of evaluation is challenging and demanding for both the student and teachers themselves. Undoubtedly, there are numerous ways that the assessment of student performance in an online environment could be successfully completed. After gaining an understanding of the characteristics of the techniques being used, it is important to emphasize that, in addition to enhancing teachers' and students' abilities, it is important to support and influence the growth of their awareness of the role they can play in the process of evaluating both their performance and instructional methods

5. CONCLUSION

Information on accomplishments acquired in an online environment has a favourable impact on students' motivation for future learning, according to research on the impact of feedback in an online learning environment (Al-Darei & Ahmed, 2022). Additionally, it was discovered through the analysis of relevant resources that teachers require more support and information regarding the requirements of online assessment. This study attempts to analyze relevant theoretical and empirical studies concerning the evaluation of student performance in an online setting. We began by assuming there was a significant number of studies on this subject, which turned out to be correct (Kristiyanti, 2021).

Although it is on its way out, the Covid-19 pandemic has left evident consequences and traces when it comes to education. It broadened the horizons of all participants in the teaching process, and showed that the classroom is definitely not the only place for the realization of teaching, and for the effective implementation of all stages of the teaching process. The remaining advice is that the teaching personnel should always advance their skills and stay up-to-date with new developments in digital technology. Additionally, instructors should set up occasional online classes and ensure that students are comfortable working in an online setting. As a result, both teachers and students would be aware that working in an online setting is an option that might be used again.

Teacher has to know the students and their unique qualities, while the evaluation approach must be suited to the needs of the students as well as (Diarsin et al., 2022). There are numerous aspects that affect the quality of assessment and numerous components that should be taken into consideration during assessment, therefore evaluation of student accomplishment in any situation, whether traditional or online, should be considered as a systematic effort (Robles & Braathen, 2002). In an online setting, teachers ought to encourage discussion among students and give constructive comments in addition to teaching knowledge. The teacher should also share learning objectives with students and outline the standards to be followed during online learning (Wing & Sand, 2019). Before beginning with the presentation of content, which will be assessed later, after, and throughout the learning process, students should be able to complete activities in an online environment (Baleni, 2015). While the online setting requires teachers to work on technological and digital competencies in addition to regular professional activities (Gillet-Swan, 2017), we are witnessing that it is not enough for a teacher to only have initial education and training by participating in a certain number of seminars. The teacher, on the other hand, must work diligently to improve his professional position, conduct research, keep up with modern society's trends, and constantly seek to improve and innovate his own abilities in addition to these official forms of learning and training. Because it is anticipated that future education will take place online, this paper also has the implication that modern learning and assessment methods must be developed.

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PROCENA UČENIČKIH POSTIGNUĆA U KONTEKSTU ONLINE UČENJA

Kroz diskusiju o ocjenjivanju kao suštinskoj komponenti nastave, u radu je ukazano na značaj, ocjenjivanja u onlajn kontekstu, kao i sveobuhvatan pregled nastavnica koji se odnosi na osnove, karakteristike i metodologiju onlajn ocjenjivanja. S obzirom na potrebu za permanentnim podizanjem profesionalnih kompetencija nastavnika na ovaj način bi se obezbedila njihova uspešna integracija u savremene obrazovne procese. Kroz analizu relevantne literature koja je prikupljena na platformama Google Academic i ResearchGate cilj rada bio je da se nastavnicima pruži više znanja o onlajn ocjenjivanju, da se utiče na podizanje njihove svesti i da se uklone prepreke za njegovu primenu od strane nastavnika koji često imaju predraude u odnosu na onlajn ocjenjivanje. Izvršena analiza odnosila se na publikacije objavljene u prethodnih 20 godina, uzimajući u obzir trenutnu relevantnost teme. S obzirom na rezultate dobijene analizom, a imajući u vidu činjenicu da su ranija istraživanja pokazala da obrazovni sistem nije imun na društvene teškoće, savetuje se da nastavnici prihvate onlajn ocjenjivanje kao zamenu za tradicionalne metode ocjenjivanja i da se upoznaju sa njegovim značajem i potencijalnim strategijama implementacije.

Ključne reči: učeničko izvođenje, onlajn okruženje, onlajn ocjenjivanje, tehnike onlajn ocjenjivanja, nastavnik