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1.9. PRINCIPLES OF ASSESSMENT DURING ONLINE LEARNING IN GENERAL SECONDARY EDUCATION INSTITUTIONS

1.9. ПРИНЦИПИ ОЦІНЮВАННЯ ПІД ЧАС ОНЛАЙН-НАВЧАННЯ В ЗАГАЛЬНООСВІТНІХ НАВЧАЛЬНИХ ЗАКЛАДАХ

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Abstract: The article substantiates the need for online assessment of general secondary education learners and considers new strategies for its organization and management. The study used the methods of researching scientific sources and legislative documents, as well as theoretical analysis and synthesis. The results showed that the following assessment principles are effective: learner-centered and self-reflective, participatory assessment, and the use of assessment methods appropriate to the learning context. The conclusions recommend providing learner-centered assessment, encouraging learner input, and using a variety of learning activities and assessments.

Key words: assessment, online learning, online teaching, general secondary education, assessment principles, learning outcomes.

Анотація: Стаття обґрунтовує необхідність онлайн-оцінювання учнів загальноосвітніх навчальних закладів і розглядає нові стратегії його організації та управління. У дослідженні використано методи вивчення наукових джерел і законодавчих документів, а також теоретичний аналіз та синтез. Результати показали, що ефективними є такі принципи оцінювання: орієнтоване на учня та саморефлексивне оцінювання, участь у оцінюванні та використання методів оцінювання, відповідних контексту навчання. У висновках рекомендується забезпечувати оцінювання, орієнтоване на учня,

заохочувати внесок учня і використовувати різноманітні навчальні активності та оцінювання.

Ключові слова: оцінювання, онлайн-навчання, онлайн-викладання, загальна середня освіта, принципи оцінювання, результати навчання.

Online learning and its assessment have provided an incentive to change pedagogical styles and apply new strategies in organizing and managing the educational process, as well as in accessing useful information sources (Mei & May, 2018; Casanova et al., 2020; Fayez et al., 2021). However, the excessive use of the online environment by general secondary education students for entertainment changes their attitude towards learning. The problem of directing the student to activate cognitive abilities arises.

Online teaching and learning in general secondary education institutions involve different approaches, and therefore, the principles of forming learning tasks and their assessment should also be different. This leads to the modification of traditional approaches to assessment, because the methods and technologies that can be found on the global Internet can be used to assess the learning outcomes of general secondary education students. It should be noted that the online educational environment is changing our approach to assessment and the ways in which it can be used to support and assist general secondary education students in the learning process.

Thus, when assigning a student's grade, the student's progress in the learning process is not taken into account at all: the efforts and diligence of the student. Assessment is an educational tool that requires pedagogical skill in assessing both the result achieved and the process of work itself, which stimulates the student to learn and rewards success. The child should realize the assessment "as a result of mental effort" (Сухомлинский, 1972). It should be noted that the term "assessment" has several meanings: an action in the sense of evaluate, assess - a definition from the verb of both completed and incomplete action (Busel, 2004); an accepted designation of the quality of knowledge and behavior of students, which is the result of human activity (Бусел, 2004); an opinion, reasoning about the quality, nature of something (Словник української мови, 2018).

Let us pay attention to the study of the problem of assessment and its effectiveness in the educational process of general secondary education. Thus, T. Angelo and K. Cross (1993) support the idea that, for assessment to be effective, it must be embedded in the overall logic of the subject matter and be consistent with it. Researchers have identified a number of characteristics of effective classroom assessment: it should be learner-centered, teacher-driven, mutually beneficial, developmental, context-specific, ongoing, and firmly rooted

in instructional practice. These principles can be effectively applied in the context of online learning.

O. Lyashenko, T. Lukina, Y. Zhuk, L. Vashchenko, A. Hryvko and S. Naumenko (Ляшенко et al., 2017) searched for different ways to assess students' learning outcomes that would regulate the relationship between the number of tasks and their complexity in the process of assessing students' competence, taking into account their individual characteristics. Thus, researchers found that adaptive assessment makes it possible to assess the level of students' competence depending on their level of general education. Adaptive testing is a methodology for assessing students that involves changing the sequence, content, and complexity of tasks in the testing process, based on the answers provided. In general, three types of pedagogical tests are used in student assessment: educational and standardized; partially adapted; and fully adapted.

N. Batsula (Бацула, 2021) notes that online assessment makes it possible to monitor and correct the learning process, as well as to objectively assess students. According to the author, this is effectively served by testing, which should be conducted at every lesson. However, in order not to burden students, test questions should be aimed at understanding the material studied and practicing learning skills. In this regard, in addition to simple questions, it is recommended to add more complex ones to the test, which will correspond to a high level of mastery of the educational material.

According to Evelina Bazhmina (Бажміна, 2021), the teacher's assistance in learning should be manifested in his or her attitude as a mentor to the student: friendly joint activities, promoting self-confidence, providing guidance and useful advice in the learning process, ensuring constructive dialogue and forming a strategy for successful learning.

In online learning at general secondary education institutions, it is important to adhere to the principle of student-centered learning outcomes assessment and self-reflection. It is necessary to focus on the fact that a well-designed subject that can be taught online should be student-centered and student-focused, so the assessment of student learning outcomes within the subject should be the same.

The key characteristic of learner-centered teaching, as focusing directly on the learning process, is described by M. Weimer (2002) in his work "Learner-Centered Teaching: Five Key Changes in Learning". When the learning process changes, the assessment process must change with it. In addition, the researcher emphasizes the importance of empowering students both in the learning process and in the assessment process. In the online environment, empowerment takes the form of learner responsibility for learning activities, such as discussions,

participation in collaborative activities, and self-reflection as an important way of assessment.

The process of reflection that should be included in an online course actually provides the basis for learner-centered assessment. Therefore, general secondary education students should be encouraged to engage in self-reflection and it should be included in the program and expected outcomes of the online course. Therefore, learners should be encouraged to analyze their progress at least twice during the course of the subject: at the midpoint and at the end.

Let us focus on a popular task for self-assessment of learning outcomes outside of Ukraine, developed by T. Angelo and K. Cross (1993), also known as the "One Minute Report". In the classroom, the teacher can use the last few minutes of the lesson to ask students to reflect and answer the following two questions: "What was the most important thing for you in this lesson?" and "What questions remain unanswered?" Such self-reflection questions can be asked at the end of each week or at the end of each topic covered.

Often, such a report is supplemented by a clarifying question: "What was your contribution to the learning process this week?" For self-assessment, you can also use the Critical Incident Questionnaire (CIQ) (Table 1) by S. Brookfield (1995). This five-question questionnaire is designed to be used at the end of a face-to-face class as a form of ongoing formative assessment, but can be easily adapted to an online environment similar to the One Minute Report. It is useful not only as a self-assessment tool for general secondary education students, but also for obtaining current information about what works or does not work in online learning.

Table 1

Questionnaire on critical incidents

№	Question	Answer
1	At what point in this week's class did you feel most engaged with what was happening?	
2	At what point in class this week did you feel most disengaged from what was happening?	
3	What was the most encouraging and helpful thing someone (teacher or student) did in class this week?	
4	What was the most surprising or confusing thing someone (teacher or student) did in class this week?	
5	What was the most surprising thing that happened in the classroom this week? (This could be your own reaction to what was going on, or something someone did, or something else that was bothering you.)	

Another way to link self-assessment and formative assessment is through the use of web-based tools such as "Student Assessment of Learning Gains" (SALG) (Ekeigwe, 2022). Currently, this electronic resource (<https://salgsite.net/>) (Fig. 1) can be used by teachers of any subject to determine how well the educational material has been mastered by students of general secondary education. It should be noted that the questions can be modified to fit the content of the subject, and reports can be created that will facilitate formative assessment of the learning process and generate data for student self-assessment.

STUDENT ASSESSMENT OF THEIR LEARNING GAINS

Welcome to the SALG Website for Instructors!

**** New Features and Improvements! ****

1. A new, wizard-style interface, makes it faster and easier than ever to set up an instrument from scratch.
2. The questions have been reordered to put the learning objectives first and the pedagogy second. This change reflects the usual priority of these questions and greatly eases pre/post analysis. If you prefer the old order, you can reuse one of your old instruments, or choose the Old Order template from the list of user-created instruments.

Please send comments and suggestions to help@salgsite.org.

The SALG website is a **free course-evaluation tool** that allows college-level instructors to gather **learning-focused** feedback from students.

Anyone may register and use the site.

Once registered on the SALG site, you can:

1. Create and use a SALG survey to measure students' learning gains in your course and their progress toward your course's learning goals.
2. Create and use an optional baseline survey to discover students' starting point relative to course goals.

[Returning user login](#) [Take a tour of SALG](#) [Register as a new user](#)

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Fig.1 A tool for learners to evaluate their learning outcomes

This gives the teacher an extraordinary opportunity to guide students to better performance. This approach can even be used in math to help students identify what they have learned in an online class and what they need to spend more time and effort on. Therefore, general secondary education students should be asked to analyze their participation in learning tasks and their contribution to the group. In addition, asking students to reflect on the process not only allows them to evaluate themselves, but also provides the teacher with very important general information that can be incorporated into future learning tasks. One example of a student-centered assessment that focuses on self-reflection is the use

of a student portfolio. The portfolio consists of different types of work that the student has done during the school year, such as creative work, tasks, projects, etc. The student has the opportunity to independently determine the work to be included in the portfolio, thus promoting self-reflection and self-assessment, and helping the teacher to make an objective assessment of the student's learning. In online learning, it is important to apply the principle of joint assessment of learning tasks: from student to student. Significant developments in the field of student learning outcomes assessment have been proposed by R. Palloff and K. Pratt (2007, 2013), as well as B. Smith and C. Brame (2020). In particular, the researchers addressed the aspect of collaborative assessment. Such assessment, according to the scientists, helps learners achieve a higher level of knowledge acquisition, moving from independence to interdependence, thus strengthening the basis of collaborative online learning.

Let's consider the mechanism of the sequence of actions for joint assessment of learning tasks through the distribution of work from student to student. Thus, after completing a collaborative activity, the teacher asks students to provide a self-assessment of their own contribution and participation in the task, as well as an assessment of their classmates who performed the same task. In this context, the teacher has to decide what to assess, how to assess it, and how to respond to any assessment material gathered through the reflective materials provided by the students. Ultimately, it is the teacher who is responsible for assigning the final grade in the subject and for following up with those who are not doing well. For this purpose, they have developed a toolkit to guide students' self-assessment: how well did I participate in my group's tasks?; was I a team player?; did I make a significant contribution?; did I share my part of the workload?; how comfortable did I feel during group work? Did I feel comfortable expressing any problems or concerns? Did I provide meaningful feedback to other group members? How do I feel about the collaborative work done by my group? How well did the collaborative process contribute to my learning goals and objectives for this course? Students then grade themselves and their classmates, and this is a key element of this approach that teachers need to pay attention to, as they will then have to do their own grading. After this assessment, the teacher assigns two grades for the assignment: one group grade for the group's assignment and an individual grade for each member of the learning group. Note that group assignments, and especially the grading of these assignments, can be more challenging in an online environment, and establishing guidelines for collaboration and shared grading can help.

It is important to realize that collaborative processes foster initiative on the part of learners, as well as creativity and critical thinking skills. Collaboration also allows for meaningful dialogue, which is certainly critical for the discussion

aspects of an online course. By studying together in a learning group, students have the opportunity to broaden and deepen their learning experience, try out new ideas by sharing them with the group, and receive critical and constructive feedback. The likelihood of successful achievement of learning goals and positive results in the subject increases through collaborative work (Brookfi, 1995).

In the context of online assessment, it is important to use the mechanisms of peer review (for criticism) and peer evaluation (criticism and proposed evaluation). It should be noted that, often in face-to-face classes, time constraints may prevent the effective use of this kind of peer assessment. However, in an asynchronous online environment, assignments can be posted for other students to read and complete (Michigan State University, 2005). According to this approach, learners can be organized into large groups as peer review partners, or they can be organized into small groups to complete a learning task. Websites and software tools developed for this purpose are actively used for peer and self-assessment. One such site is Calibrated Peer Review (2022).

This is a web-based learning tool that allows for assignments in any subject and any class size, even in large classes with limited teaching resources. The web resource offers teachers the opportunity to create their own writing assignments or use existing learning tasks. Despite the fact that the application is in English, it is suitable for use in both middle and high school. The key feature is the use of already created learning tasks for online assessment or the creation of your own tasks and criteria for peer and self-assessment. It should be noted that the initial use of websites or tools requires some time to set up, but this greatly simplifies the task of peer review and provides a more objective assessment. If the website or tool is not used, then, according to M. Palloff and K. Pratt (2009; 2013), students should be provided with recommendations (Table 2) on how to conduct peer review.

Table 2

Form of recommendations for students for online review

Criteria	Сторони			
	Weak	Acceptable	Strong	Comment
<i>Clarity.</i> The writing is clear and the meaning of the information is conveyed to the reader.				
<i>Evidence.</i> There are supporting references to studies and citations.				

<p><i>Structure.</i> The document is well organized, with ideas flowing into each other. Subheadings are used correctly.</p>				
<p><i>Mechanics and style of references (APA).</i> Contains few or no grammatical or mechanical errors and is properly formatted.</p>				
<p><i>Effectiveness.</i> The overall result is effective and convincing, and demonstrates a mastery of the topic.</p>				

To ensure that peer review feedback forms are used effectively, the teacher should provide a sample of work that has been evaluated using the form. Students should also be given the opportunity to practice giving feedback to the teacher on how well they will handle the peer review. It is important that students receive clear information about the expectations for the assignment and the peer review process, as well as effective ways to conduct peer review through the sharing of work from student to student. The principle of using assessment methods that are appropriate to the learning context and aligned with learning objectives is important in ensuring effective teaching practice. Morgan and O'Reilly (2020) argue that if an online course is designed with clear guidelines and goals, as well as with tasks that are relevant not only to the subject but also to students' lives, and if students understand what is expected of them, then assessment will be consistent with the subject as a whole and will not be seen as a separate and cumbersome learning task. Keeping this principle in mind should also encourage the use of assessments that go beyond tests, quizzes, and other memorization exercises. While tests and quizzes are useful for online assessment, they should not be the primary means of assessment. A variety of assessment methods should be used to effectively assess learners' online performance. This also follows the rule that collaborative activities embedded in an online course, whether it is a discussion activity or a group project, are best assessed through collaborative tools.

One example of assessment methods that are appropriate to the learning context and aligned with learning objectives is the use of reverse-response tests.

Such tests provide an opportunity to assess the understanding of the learning material and the ability to apply the knowledge gained in practice. For example, in a reverse task, a student is asked to describe what they do not understand about a particular topic. This allows the teacher to assess how well the student has understood the material and how deeply they have comprehended it. However, many teachers note the difficulty of using tests and quizzes to assess the learning outcomes of general secondary education students. The prevailing opinion is that authentic assessment (a form of assessment of personal learning achievements (results)) is more effective in online learning outcomes assessment. Thus, the use of self-analysis, peer review, and well-designed rubrics can better meet the goals of an online course and fit more easily into its content. The principle of taking into account students' opinions on assessment gives students the freedom to choose the type, methods, and other characteristics of assessment, which is a positive element in building a trusting relationship with the class. This allows the teacher to take into account the positions identified by the students when developing a plan for assessing learning outcomes. Thus, by collaborating on assessment, teachers and students strengthen their understanding of the subject matter and develop their own self-assessment skills (Angelo & Cross, 1993). Focusing on student-centered learning leads to greater involvement of students in managing their own assessment process by determining how they want to be assessed and by using self-assessment tools (Bachman, 2000).

Despite the common belief that today's learners lack the ability to self-direct, we take the position that through the development of learning activities that promote self-direction (e.g., collaborative tasks and self-assessment), students can be taught skills that will contribute to a greater ability to participate in assessment in an online environment. Teachers should engage students in online assessment (Hase & Kenyon, 2000) when the desired outcomes are: enhancing a sense of community; promoting self-directed learning, self-efficacy, and discovery; developing problem-solving skills; and introducing an element of choice in assessment. Therefore, engaging learners in online assessment is based on the belief that learners can be the experts when it comes to their own learning and that it is important to promote self-direction.

The following approaches can be used to achieve this goal: surveys among students on issues related to assessment, including forms and methods of assessment, objectivity of assessments, duration of tests, etc.; group discussions with students, wherein each of them will have the opportunity to express their opinions and ideas for improving the assessment system; online surveys where students can answer questions about assessment and share their thoughts and ideas. When considering students' opinions on online assessment, teachers should

take into account the age and individual characteristics of students, their level of knowledge and skills, and the context of the learning.

Given the above, to solve the problem of assessment in online learning in general secondary education institutions, it is advisable to apply the following principles: student-centered learning outcomes assessment and self-reflection of learning tasks from student to student; use of assessment methods that are appropriate to the learning context and aligned with learning objectives; and taking into account students' opinions on assessment.

Recommendations for assessment in online learning in general secondary education include: designing learner-centered assessments that are aligned with all learning objectives; developing course content that includes a variety of learning activities and assessment measures and accommodates different learning styles while preventing plagiarism and cheating; encouraging, engaging, and evaluating learner contributions to discussion topics; providing prompt feedback on assessments and learning tasks; using tests and online tests, as well as open-ended activities; and online assessment of learning outcomes based on the use of learning projects, portfolios, self-assessment, peer assessment, and weekly assignments.

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