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MANAGING ASSESSMENT IN ONLINE AND OFFLINE ADULT LEARNING ENVIRONMENTS: A META-REVIEW

Keywords: Management of assessment, management of evaluation, formative feedback, meta-evaluation, metacognitive experience, learning environments, knowledge ecology.

Summary: In recent years, there has been exponential growth in the number of research studies on assessment, testing, measurement, and evaluation strategies in online and/or offline learning settings. The efficiency of the management of these methods and their presence in higher education has not, however, been confirmed by a meta-review. Management of assessment receives much attention at the frontier of education studies since it provides the opportunity to plan, monitor, and control learning processes and outcomes. However, not only do many educational managers find this approach demanding, but it also remains unclear what they should do to foster assessment, measurement, and evaluation management standards in nowadays learning processes, which are in online and/or offline learning environments. This study explores the specific features educational managers use to promote the management of assessment, measurement, and evaluation strategies in their professional activities. The article adopts the metasystem transition methodology. After searching for data related to global trends in empirical studies on assessment,

evaluation, learning environment, and educational management, the priority of formative assessment was identified. Analyses revealed different perspectives on using formative assessment in educational management strategies. The results show that the metasystems perspective evidences the importance of research on the specifics of educational management in online and/or offline learning environments for the sustainability of higher education.

Introduction

The andragogical principle of systematic learning provides for compliance with the correspondence of goals, content, forms, methods, means of learning, and assessment of learning outcomes. Since the last century, there has been an ongoing debate on how to evaluate the performances of institutions and the competencies of professionals and/or students in educational settings. However, it has been observed that there are different knowledge management systems, various learning environments, instructional, learning, and assessment processes, and thus, various systems and tools for evaluations (e.g., assessment, measurement, testing). In general, assessment is focused on individual student learning that aims to enable learners to adjust their approach or study habits to improve their learning and/or the action of assessing someone or something to selected criteria, but "can promote learning" (Weeden et al., 2002). Self, peer, and group assessment is important in e-learning because it is integrated into active learning methodologies (Roberts, 2006). Measurement refers to the use of educational assessment strategies, methods, procedures, and techniques for analysing data (scores) to infer the knowledge, abilities, and proficiencies of students. Testing is a process of determining how much the student knows about a given topic and/or the level of knowledge that the student has reached.

Currently, assessment strategies in university education are a relevant phenomenon of research because of the importance of identifying the best strategies for the sustainability of higher education. Innovative formative and summative examples of tasks are a part of what defines any modern study as they provide crucial information about what and how students understand and how they will argue and prove their understanding. Using innovative assessment strategies removes the surprises from final examinations and exams. The problem is that the term "assessment" has a variety of synonyms, such as evaluation, judgements, gauging, rating, estimation, appraisal, opinion making, analysis, valuation, and calculation (Railean, 2020). In higher education, assessment is more related to the examination of students' knowledge in the middle or/and at the end of the semester. Furthermore, the terms assessment, evaluation, and testing are used interchangeably in some contexts. A test is a form of assessment that refers to procedures used to measure student learning at a given point in time and often involves collecting information in numerical form. Common forms of tests are multiple-choice questions and fill-in-the-blank or close-ended tests.

Moreover, assessment, measurement, testing, and evaluation of learning outcomes refer to a teaching strategy (Struyven et al., 2005; Gikand et al., 2011; Harrison et al., 2022), a method of analysing the quality of the teaching process in a digital environment (Okoye et al., 2022; Adi et al., 2022) and/or a distance learning process (Mastan et al., 2022). Assessment, either formative (assessment for learning) or summative (assessment of learning), uses tests, exams, marks, and grades as assessment procedures. However, evaluation is also a measure of higher-order thinking skills (Adeshola & Abubakar, 2020) and deep learning (Adnan et al., 2020), which refers to a specific method for learning with careful planning of assessment (Rata, Bernaz & Railean, 2020) with proof of open recognition of learning outcomes in an open environment (Smolyaninova et al., 2020), and a sign of appreciative intelligence (Bergnaz & Botezatu, 2020). Evaluations fall into one of three main categories: diagnostic evaluation (Harris, 1987; Schneider et al., 2022; Hui, 2022), formative evaluation (Mertasari & Yudana, 2022; Anila et al., 2022; Zhang & Zhang, 2022), and summative evaluation (Jadhav, 2022). The literature emphasises that effective assessment practices should align with learning objectives, be transparent, fair, and offer meaningful feedback. Additionally, assessments must accommodate diverse learning styles and ensure equitable opportunities for all students. Therefore, management of assessment and evaluation, which consists of cognitive, metacognitive, and social strategies for learning, is about strategies of planning, monitoring, and evaluating performance in a concrete evaluation setting. The literature shows that assessment and evaluation strategies are usually faced with several challenges. First, digital technologies allow us to reinterpret the mechanism of assessment, measurement, and testing from the perspective of lifelong learning in a digital learning environment. Digital assessment refers to the enhancement of the assessment process through the use of digital tools such as online exams and digital portfolios (Devran & Elçi, 2020). Digital assessment system – an information system for assessing results designed for the direct conduct of the demonstration examination under the supervision of the chief examiner, assessment of the results of the demonstration examination tasks, and execution of the accompanying and final documentation. Second, the purpose of digital assessment has direct implications for how it is planned, designed, and administered (i.e., multiple-choice items, constructed responses, etc.), as well as how the results are interpreted and used (Sparks et al., 2016). However, the efficiency of the assessment system must also be evaluated. Most, if not all, current digital assessment systems correctly assess multiple-choice and true-false questions. Short answers and essay questions, on the other hand, are more difficult to grade automatically (Akbar, 2016). Digital transformation in higher education calls for more mature forms of assessment that are more intelligent, effective, aligned, efficient, and cost-effective (Marks and Al-Ali, 2022).

Assessment methods are the information, evidence, and/or data we collect to determine the extent to which students meet the learning outcomes.

In contrast to digital assessment methods, management of assessment has received surprisingly little attention in the scientific literature despite its importance today. Yorke (1998) argued that three broad conditions must be met for assessment management to be effective: a) a clear definition of the purpose(s) to be served; b) a strategy designed to lead to the fulfillment of the purpose(s); and c) an operationalisation that 'works.' This research explores the issues of management of assessment, measurement, and testing in online and/or offline learning environments.

Management of assessment, measurement, and testing has become a global endeavor focused on the identification of better strategies for learning. For instance, Wakefield et al. (2022) argued that authentic assessment, which adds real-world value to the task, includes elements of challenge, collaboration, metacognition, transfer of knowledge, etc., when there is an effective team of students working on the same subject of study. Playfoot et al. (2022) observed that students are increasingly likely to be subjected to *continuous assessment*, particularly as higher education courses have begun to incorporate principles of online or blended learning. However, it is not clear what strategies faculty members and/or students should adopt to achieve sustainable lifelong learning outcomes. This article is concerned with the management of assessment and how researchers on the frontier of education can promote evaluation in a much broader sense. Our main assumption is that we face the demands of the "Anthropocene crisis" and that education management theory needs a fundamental shift. The research question of this study was as follows: *What are the global trends in the management of assessment and evaluation in online and/or offline learning environments?*

Theoretical framework

This study's theoretical framework for assessment is grounded in several key learning theories that inform how student knowledge and skills are evaluated. Central to this framework is constructivism, which suggests that learners actively construct knowledge through experiences, positioning assessment as an integral part of the learning process rather than a mere evaluative tool (Vygotsky, 1978). From this perspective, formative assessment plays a critical role in facilitating self-reflection and continuous improvement. Complementing this is Bloom's Taxonomy (1956), which categorises cognitive skills into a hierarchy from basic recall to higher-order thinking, emphasising the need for assessments that address various levels of cognitive complexity (Ormell, 1974). Furthermore, Yambi and Yambi (2020) argue that Assessment for Learning is a formative tool to provide feedback, guide instruction, and involve learners in their own learning processes. Together, these theoretical perspectives highlight the importance of dynamic, ongoing, and reflective assessments that promote deeper understanding and foster student development.

Assessment is a formal or informal, casual or unintentional process, which powerfully affects the motivation of students to learn if it is used to empower students for learning. Management of assessment is an important task for researchers in higher education. "Evaluation is not restricted to the context of education. It is a part of everyday lives" (Rea-Dickins et al., 1992). The differences between management of assessment and evaluation must be clarified to determine what management of assessment and evaluation in online and/or offline learning environments is. First, the differences between assessment and evaluation should be clarified. Second, since different specifications of management strategies can be found, it is important to research and describe differences between evaluation and assessment management.

Assessment versus evaluation

Assessment refers to the action of assessing someone or something for better decisions and outcomes and is described as formative and summative. As noted by Bransford (2000), assessment is a core component of effective learning. But, as was noted by Rea-Dickins (1992), evaluation is a natural activity and a part of our daily existence. Evaluation can be very formal or informal, sometimes vague and ill-defined, and, in many cases, undertaken unconsciously. Making evaluative judgments is a feature of social life, but not what we do in a principled and systematic way. However, in evaluation and assessment, there are many uncertainties and constraints, and many limitations are derived from the specific training and extensive practical experiences of managers (Bachman and Palmer, 2022).

Currently, evaluation refers to a strategy or a method of making a judgement about the amount, number, or value of something (Baxter et al., 2022). In classical learning theory, evaluation has three main purposes, namely, to certify student achievement, to compare the results of educational institutions and the education system, and to promote learning through the provision of helpful assessment and feedback. Evaluation strategies can be formative or summative, but there are other important considerations that apply to both situations, such as who participates, what roles were taken, what techniques were used, and in what situations evaluation occurs.

Differences between assessment and evaluation are presented below (Table 1).

Table 1. Differences between assessment and evaluation

	Evaluation	Assessment
Focus	Strategies as learning/for learning processes or "ends" of learning	Action or data to improve the didactic process
Nature	Judgemental	Diagnostic and correctional
Process	Formative and summative strategies in instructional/learning design	Summative and formative aspects of teaching or learning
Types	Formative, summative, meta-evaluation	Formative, summative, meta-assessment
Feedback	Immediate, interactive, adaptive	Determined by standards

Mayanja (2020) noted that as a result of changes in higher education, approaches to evaluation and quality control have become important issues for debate. Karimi et al. (2021, p. 187) suggested that the capacity-building of stakeholders in educational science is important for the proper functioning of the national education sector. However, most initiatives neglect an important facet of an evaluation theory that relates the educational environment to a diversity of learning environments and that may influence stakeholder decisions regarding the performance of institutions or professionals. It remains unclear which facets should be considered in evaluation management because of a crisis in learning theory and the uncertainty of assessment and evaluation in different learning environments.

Historically, both assessment and evaluation could be both formative and summative. Thus, Scriven advocated formative evaluation in the book "*Teaching Education*" and then meta-evaluation as an evaluation of evaluation (Scriven, 1969). Later, Bloom noted that formative evaluation aims to support student growth, assess student emotions, attitudes, skills, and learning strategies, and provide timely feedback to instructors and students on the findings (Bloom, 1971). According to Stufflebeam (2011), meta-evaluation is a process of identifying, acquiring, and applying information that describes and interprets the usefulness, adequacy, accuracy, systematic characteristics, and social responsibility of an honest evaluation.

Meta-evaluation assesses the pros and cons of evaluation. However, this is a self-management process because evaluation, in general, does not involve comparison. Thus, evaluation and meta-evaluation are two sides of reflective thinking, where evaluation is focused on cognition and meta-evaluation is focused on metacognition. This bidirectional association between evaluation and meta-evaluation may be considered the result of two distinct phases of the Anthropocene. In the first phase, evaluation and knowledge synthesis were established. In the second phase, the associative links migrated to open learning environments.

Assessment management versus evaluation management

Assessment management refers to the practice of planning, monitoring, and evaluation of assessment. The goal of assessment management is to maximalise the value of an institution, system, strategy, particular program, method of study, or professional competences. Key assessments have been developed over many years but always include reflection journals, self-assessment, peer assessment, and/or collaborative assessment. Students' assessment has likewise been varied over the emergence of diverse online and/or offline learning environments.

The process of planning and implementing the evaluation is referred to as evaluation management. It is about connecting the critical points during the evaluation process, thereby creating a bridge between 1) evaluation and 2) strategy and operational work. Thus, evaluation planning is about identifying the role and purpose of evaluation and how it is linked to educational and organisational

elements, followed by thoroughly communicating the links to participants. The evaluation strategy is a process by which educational managers evaluate how well a chosen strategy has been implemented and whether the strategy is successful by reviewing the implementation process as well as measuring organisational and student performance.

Most studies of evaluation management focus more on defining the criteria for evaluation and less on 'strategic thinking and planning' (Patton & Patrizi, 2010). Thus, according to Rogers (2015), a good evaluation is not possible without an effective evaluation management plan. Zeng et al. (2022) note that formative evaluation seeks to continuously improve student learning, but only if it includes three important dimensions: a) self-evaluation, where each student plays an important role in the learning process; b) co-assessment, where the student is part of a team and is actively involved in cooperative or collaborative activities; and c) hetero-assessment, where progress is evaluated on the basis of well-established criteria.

The subject of evaluation management is a hot area of research in the design of expert systems and their practical applications in the effectiveness of e-learning systems (Xu et al., 2014) and multiagent systems (Calvaresi et al., 2019). More recently, Kazemi et al. (2021) described the situation in which evaluation management was applied in computer science to solve dynamic optimisation problems. In other words, evaluation management evaluates the competencies of organisations, human beings, and intelligent agents in a diversity of learning environments. However, the vague understanding of the definition of evaluation management and the diversity of its synonyms leads to serious ambiguities in the understanding of strategic management and leadership and, therefore, of managers' decision-making and leadership capabilities. In general, the term "*evaluation management*" is defined as the process of planning, developing, and implementing the evaluation. However, it is unclear whether evaluation management also refers to self-evaluation processes (Taylor et al., 1995), its dynamicity (Vallacher et al., 2002), collaborative learning in school self-evaluation processes (O'Brien et al., 2022), or/and the capacity to appreciate knowledge or effort, known as "appreciative intelligence" (Sandu, 2017). Without consideration of these elements, there would be no reason to predict interference between assessment, measurement, and testing strategies on account of evaluation management at all. However, if the assumption holds that evaluation management is simply about implementing the evaluation, evaluation managers would multitask to plan assessment in a diversity of learning environments while bypassing any suspicion of interference. Consequently, such behaviour would challenge theories that postulate the need for a 'risk evaluation index' (Wang et al., 2022), supported by the idea that evaluation is always a comparison of solo tasks, even if the question of who compares and whom it compares remains unresolved.

Methodology of research

Metasystem transition theory was developed in the seventies (Joslyn et al., 1970). The main idea is that a higher level of complexity and control are generated because of higher-level processes. First-order knowledge undergoes selection by second-order thinking in the real environment. In this theory, "meta" is defined as what is beyond the system in the form of a system of systems or a system about other systems, presenting the idea of external control. Futures developed by Francis Heylighen, John Maynard Smith, Eors Szathmjary, Eric Jantsch, etc., state that meta-evaluation is a result of metasystem thinking.

This article adopts the metasystem transition methodology. It consists of three phases

- identification of core concepts (i.e., assessment, evaluation, learning environment);
- identification reference concept (in our case, educational management);
- comparison of research shared in a specific period related to the reference concept.

The metasystem transition in educational management can be described on the basis of global trends in assessment, evaluation, educational management, and diversity of learning environments. With digital technologies, new ideas emerged in the design of assessment, evaluation, educational management systems, and learning environments, which diversified the typologies of feedback and management of data. To argue our idea, Google Books Ngram Viewer was used – 'an online search engine that charts the frequencies of any set of search strings using a yearly count of n-grams found in sources printed between 1500 and 2019 in Google's text corpora in English' (Google Books Ngram Viewer, 2021). For the search engine, the following keywords were used: formative assessment, summative assessment, online assessment, and educational management. The period of study was limited to 1960–present. The results of the research are presented in Fig. 1.

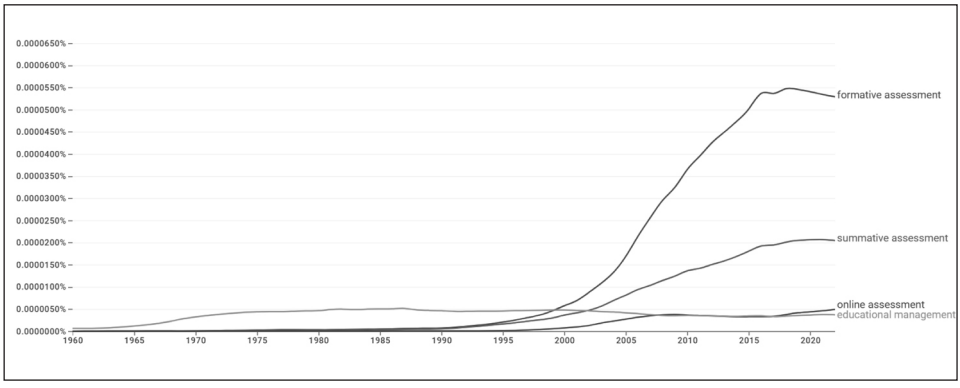

Fig. 1. Global trends in assessment and educational management

In research, assessment is more deeply investigated than evaluation because it relates to the well-planned strategy of students. As was noted by Liao et al. (2024), the formative assessment is essential for improving teaching and learning, traditional formative assessment tools lack accurate data-oriented assessment and usability, and AI and visualization techniques have great potential for formative assessment in physical and/or online learning environments. The authors advise implementing the AI-enabled visual report in large classes due to its overall beneficial effects on learning achievement and self-regulated learning, which are supported by experimental data.

Riegel (2024) notes that online formative assessments provide a distinct method for educators to collect empirical data regarding student engagement, understanding, and critical thinking skills. In the opinion of Luzano (2024), real-time feedback mechanisms and formative assessment practices enable students to engage actively in their learning process, fostering metacognitive skills and self-regulation. Moreover, the approach to transformative learning puts students at the centre of their education, gives them the tools to take charge of their formal and informal education, and helps them develop liquid skills that are immediately applicable to real-world circumstances. It does this by drawing on the ideas of scenario-based microlearning and formative assessment techniques. Therefore, if assessment strategies are changing in favour of formative assessment, the big difference between formative assessment and online assessment could be observed. We can estimate that these differences are more notable with the emergence of generative artificial intelligence (Figure 2).

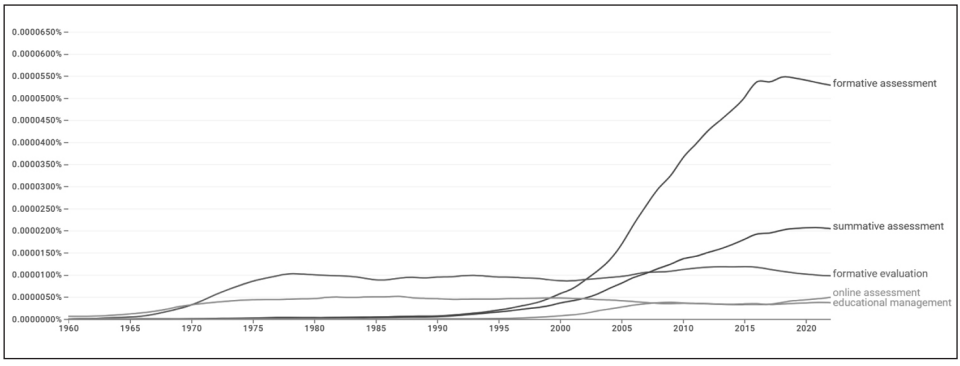

Fig. 2. Global trends in formative assessment, formative evaluation, and meta-evaluation

Formative assessment is a hot area of research. Following the viewpoint of Gikandi et al. (2011) in the literature review, we agree that assessment can be deeply embedded in university pedagogy, taking into account that learning should be transferable to the reality of changing environments. The role of formative assessment in online education is to promote student-centred learning

environments. The pros and cons were investigated by Baleni (2015), who argued that formative assessment is, first, an assessment of learning. For this, formative assessment tends to benefit from computer-administered multiple-choice questions to enrich students' interest, curiosity, critical thinking, and motivation for deep learning. Instead of traditional assessment, online formative assessment is less stressful, relaxed, and conveniently timed.

An important role in formative assessment is attributed to immediate feedback, which refers to any information, process, or activity that affords or accelerates student learning based on comments relating to either formative assessment or summative assessment activities. Formative feedback, according to Irons and Elkington (2021), could be provided through informal interactions, classroom situations, one-on-one tutorials, formative assessment activities, online learning, groupwork as part of the summative assessment process, and work-based placements. Formative assessment refers to any task that creates feedback (or feedforward) to students about their learning process and obtained outcomes.

From the assessment to meta-evaluation in online and/or offline learning environments

The educational environment is where schooling, learning, growth, and development of students occur through educational activities, friendliness, cooperation, and supportiveness. Researchers have proven the connection between the pedagogical design of the educational environment and students' adaptation, satisfaction, achievements, and success (Komarova et al., 2022). However, the educational and/or learning environment is mostly designed by how it is perceived by the instructional designer or manager of education. The term "educational space" is closely related to the concept of educational environment, but it is not the same. The environment includes space; it is one of its elements. But it is not limited to it. But space also includes the environment in some sense.

The term "learning environment" refers to the broader view of the educational environment, which emphasizes the social, cultural, and emotional dimensions of learning. Thus, in the opinion of Cohen (1968), learning environments sustain self-regulated learning. Creating a comfortable learning environment for adults should take into account learners' past experiences and create prerequisites for their further motivation. Adult students bring rich and varied knowledge and experience to the classroom. Currently, the concept of a learning environment has become current in educational discourse in close connection with hyperconnectivity, networking, and AI in education. According to Midoro (2005), a learning environment is a place or community in which several activities occur to support learning, and those actors draw upon some resources when doing so. Almasri (2024) notes that incorporating AI-powered tools into science education yields a number of pedagogical advantages, such as improving the learning environment, developing

tests, evaluating students' work, and forecasting their academic success. In sum, an emerging multidisciplinary field called artificial intelligence in education uses AI technologies to improve and innovate teaching and learning settings. The problem is that learning environments are very diverse and could be online, offline, blended, and mixed.

Is the evaluation and assessment in learning environments the same as in an educational environment? Evaluation is not an activity in an isolated setting. After the COVID-19 pandemic, it was observed that both educational and learning environments first refer to the group atmosphere, adequate conditions to learn and communicate, student personality, well-being, etc. Second, each environment should be clean and safe, with adequate temperature and light, sound, and space. Third, it is important to have digital hygiene for successful learning and communication. All these variables should be included in evaluation and assessment strategies.

Evaluation means evaluation of merits (i.e., system, processes, outcomes). Meta-evaluation refers to evaluations of evaluation (Stufflebeam, 1978). The goal of meta-evaluation is to assess the personnel, procedures, and impact of a statewide evaluation system, both by formative and summative procedures. However, it can be observed that meta-evaluation is a day-to-day project management procedure because it suggests the inclusion of modifications for improving the quality of the learning process and outcomes. Meta-evaluation is about how to review the evaluation processes, findings, and conclusions drawn.

As the final stage of the evaluation process, meta-evaluation is the process of revealing deficiencies and errors. In a recent study, Qian-Khoo et al. (2022) observed that meta-evaluation refers to impact evaluation and measurement – difficult tasks for both social impact providers and funders. Measuring the impact of social interventions necessitates ongoing research and the development of evaluation approaches and tools. Nevertheless, meta-evaluation is a viable method for investigating impact evaluations used in the broader social sector, particularly in education.

Conclusion

Management of assessment and evaluation in online, blended, and/or offline learning environments is important for the sustainability of higher education. However, most research on evaluation management focuses on analysing the quality of personnel, policies, products, or educational organisations and not the learning process. In particular, the evaluation system uses explicit criteria even though evaluation in informal settings is ill-prepared and uninformative.

It is not clear under what circumstances evaluation management is effective. On the one hand, evaluation is a part of our daily existence and an activity every human will participate in. Consequently, evaluation management is equivalent to

self-assessment. On the other hand, evaluation is a part of theoretical and practical activities without a widely accepted paradigm. However, evaluation management models can be client-centred/responsive, utilization-focused, based on decision/accountability, consumer-oriented, constructivist, based on case studies, outcome/value-added assessments, etc.

When individualising the learning trajectory of adults, it is important to be able to objectively evaluate the results, highlighting their personal achievements.

In higher education, the vague definitions of the term evaluation management lead to serious ambiguities in the understanding of teacher behaviour in rapport with student motivation to learn and their cognitive, metacognitive, and emotional underpinnings in offline and/or online learning environments. To give an example, it remains unclear if either positive or negative emotions affect knowledge, memory, and output, and if yes, how students could manage emotions at exam time. For instance, if there were no emotions, students would simply learn all the provided material, and there would be no reason to have metacognitive experiences. However, if this assumption of an absence of emotion holds, students would perform well in the reproductive tasks but bypass metacognitive tasks. Consequently, such an approach would question classical evaluation theory, which postulates that evaluation should be fully accountable.

The role of formative assessment and feedback is to help students understand "the level of learning they have achieved and clarify expectations and standards" (Irons and Elkington, 2021). However, evaluation and meta-evaluation are indispensable components of the same assessment process. In our opinion, it is helpful to adopt the metasystems perspective that surely narrows the scope of evaluation and assessment management and serves to explicate assumptions regarding the relationship between assessment, evaluation, assessment, meta-assessment, and meta-evaluation in a diversity of learning environments.

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ZARZĄDZANIE OCENĄ W ŚRODOWISKACH UCZENIA SIĘ DOROSŁYCH ONLINE I OFFLINE: METAPRZEGLĄD

Słowa kluczowe: zarządzanie oceną, zarządzanie ewaluacją, formatywna informacja zwrotna, metaewaluacja, doświadczenie metapoznawcze, środowiska uczenia się, ekologia wiedzy.

Streszczenie: W ostatnich latach nastąpił gwałtowny wzrost liczby badań dotyczących strategii oceny, testowania, pomiaru i ewaluacji w warunkach uczenia się online i/lub offline. Skuteczność zarządzania tymi metodami i ich obecność w szkolnictwie wyższym nie została jednak potwierdzona w metaprzeglądzie. Zarządzaniu oceną poświęca się wiele uwagi na pograniczu badań edukacyjnych, ponieważ zapewnia ono możliwość planowania, monitorowania i kontrolowania procesów i wyników uczenia się. Jednak wielu menedżerów edukacyjnych nie tylko uważa to podejście za wymagające, ale także pozostaje niejasne, co powinni zrobić, aby wspierać standardy zarządzania oceną, pomiarami i ewaluacją w dzisiejszych procesach uczenia się, które odbywają się w środowiskach uczenia się online i/lub offline. W niniejszym opracowaniu zbadano specyficzne cechy, które menedżerowie edukacyjni wykorzystują do promowania zarządzania strategiami oceny, pomiaru i ewaluacji w swojej działalności zawodowej. W artykule przyjęto metodologię transformacji metasystemu. Po wyszukaniu danych związanych z globalnymi trendami w badaniach

empirycznych dotyczących oceniania, ewaluacji, środowiska uczenia się, zarządzania edukacją, zidentyfikowano priorytet oceniania kształtującego. Analizy ujawniły różne perspektywy wykorzystania oceniania kształtującego w strategiach zarządzania edukacją. Wyniki pokazują, że perspektywa metasystemów dowodzi znaczenia badań nad specyfiką zarządzania edukacją w środowiskach uczenia się online i/lub offline dla zrównoważonego rozwoju szkolnictwa wyższego.

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