

The Artificial Intelligence (AI) equipped didactic assessment products: From concept to educational management approaches

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Abstract: *Initially resorting to the analysis of scientific literature from various fields related to the educational sciences, such as educational management, docimology, and assessment theory, as well as the fields of development of program products and artificial intelligence, during her work the author presents a set of prototypes of AI functionalities to be integrated into various learning-teaching-assessment-self-assessment platforms to the potentially interested parties. The respective functionalities, being partially equipped with AI, allow all kind of users, including the teaching staff and students of any age category, curricular area, and/or level of studies, to interact with the assessment subjects while also benefiting from a series of advantages that satisfy the requirements of educational management for the students' sample administration during the didactic assessments, as well as during the inter- and/or post-assessment period.*

Keywords: Artificial Intelligence (AI) Products; The Docimology, Didactic Assessment; Educational Management; AI Equipped Functionalities.

1. Introduction

The expansion of digital technologies, to which even the fiercest skeptics of their possibilities of use are slowly but surely getting used, is currently expanding its borders, forcing the perception of conservatism among pre-university and/or university, formal and / or non-formal teaching staff, and other areas of human activity. Just being on the way to coming to terms with the idea of the omnipresence of technologies, most teachers, as well as the public, are on the verge of panic attacks when the subject of artificial intelligence (AI) in education is touched upon.

Didactic assessment is one of the fundamental pillars of the teaching-learning process, which, in its complexity, combines with a series of managerial, psycho-pedagogical, and/or didactic actions planned, developed, and implemented to measure and appraise the results of the educational process. Since assessment is an indispensable part of the didactic process, in the context of the current growth of digital, as well as artificial intelligence, this article aims to analyze the existing

possibilities of incorporating AI in assessment from the perspective of educational management needs. In this order of ideas follows:

- The analysis of the scientific literature in the fields related to the research topic: educational management, educational theory, assessment didactics, as well as artificial intelligence and the integration of innovations connected to it in education;
- The descriptive and critical approach to the scientific works in the approved fields to issue pragmatic syntheses regarding the possible functionalities of the educational products equipped with AI from the perspective of the educational management (EM) needs associated with the process of assessment;
- Coherent exposition of the functionalities required by EM, accompanied by examples of prototypes and the formulation of conclusions.

2. Analysis of scientific literature from the perspective of the research topic

2.1 General / some educational approaches

The most of the existing definitions of the notion of educational management (EM) determine it as a scientific field that studies the proper functioning of organizations, capitalizing on the potential of human, material (mobile and immovable), and immaterial resources of entities whose central purpose is the education and/or training of students (in a broad sense: pupils, students, other categories of trainees, and/or learners).

The set of obligations falling within the responsibilities of the EM is extensive and dependent on the processes of organizing and carrying out educational activities and/or teaching processes specific to the institution in question. This includes aspects such as the level of studies in which the organization specializes, in the case of entities concerned with the professionalization of beneficiaries, and the specializations that the institutions come within their educational offer (vocational schools, colleges, universities, etc.). Indisputably, part of these processes is the organization and successful running of the teaching-learning process, as well as the assessment process (initial, formative, and final).

In the conjuncture formed by these complex factors, there is also the digital component, to which both educational managers, methodologists, and/or teaching staff tend to relate. In the context of the increased interest in digital technologies, a vanguard factor is the intention of educational institutions to relate their management to a more innovative framework. This is also the concern of the interested parties for the inclusion of some educational and organizational transformations that have their origins in the field of artificial intelligence (AI).

Some of these states are reflected in the materials published by various researchers on dimensions somewhat related to the fields, such as:

- *Educational management*: Davey & Tatnall (2005); Burlacu (2015b); Wang et al. (2020); Rizescu et al. (2021); Burlacu (2021b);
- *Didactic assessments*: Burlacu (2014); Burlacu (2016a); Burlacu (2016c); Burlacu (2021a); Burlacu (2021c);
- *The integration of innovative approaches and/or technologies in the field of educational management*: Burlacu (2019); Burlacu et al. (2019); Al-Ababneh & Alrhaimi (2020); Burlacu (2021d); Wojtaszek et al., (2023); Burlacu (2021b); Burlacu (2021c); Burlacu (2023a);
- *The integration of innovative approaches and/or technologies in the field of didactic assessments*: Burlacu (2012a); Burlacu (2012b); Burlacu (2013); Burlacu (2015a); Burlacu (2016b); Balmuş & Burlacu (2017); Al-Ababneh & Alrhaimi (2020); Burlacu (2020a); Burlacu (2020b); Burlacu (2020c); Burlacu (2021e); Burlacu (2022a); Burlacu (2022b); Burlacu (2022c); Burlacu (2023a); Burlacu (2023b); Burlacu (2023c); Wojtaszek et al. (2023).

2.2 The views regarding the AI integration in didactic assessment

Given the fact that AI increasingly penetrates the social and professional lives of users with a wide spectrum of interests, fields of professional activity, and ages, here the target population is:

- from preadolescence (9–13 years old), conforms with Topciu (2020) „The early adolescence (or preadolescence) period is usually considered to be in the age range of 10-13 years”;
- to average adults, even more than average (40–59 years old), in Lachman's (2001) opinion: „Adulthood is usually divided into several periods: young or early adulthood (approximately aged 20–39), middle adulthood (40–59), and old age (60+). Old age is typically divided into the periods of young old (60–75) and old old (75 and up)”.

The interest of teaching staff in products equipped with AI is understandable, although along our research path we managed to find only three scientific papers that modestly try to describe and analyze the problems generated by the penetration of AI in the didactic assessment.

Thus, in the work of a USA researcher, Riegel (2024), the belief is expressed that as artificial intelligence (AI) “[...] continues to revolutionize education, the use of AI to complete online assessments poses a considerable challenge to assessment analytics.” The author considers that AI would be very welcome to support “ [...] and improve the assessment process, assessment analytics involves deriving meaningful insights from assessment data related to student knowledge and instructional effectiveness.” Among the problems highlighted by the author is

that "[...] when students utilize machine learning to complete online assessments, the validity of assessment data as an accurate representation of student knowledge diminishes."

In Turkey, a study was conducted in which approximately 74 representatives from education participated, according to Uygun (2024). During that research, "[...] the Opinion Scale on Artificial Intelligence in Education to gather valuable insights" was used, and a valuable amount of data was collected, according to which "[...] a predominantly favorable view of AI in education, albeit accompanied by significant apprehensions regarding ethical and privacy-related issues."

Another piece of research made in Sweden, according to Mozelius (2024), emphasizes the fact that "The rapid development of generative AI (GenAI) has affected" multiple fields, especially that of higher education, and is driving the emergence of "discussions on possibilities and challenges", the main attention is focused "on assessment and AI", where the respondents, 16 students from the master's cycle with a specialization in educational sciences, expressed their opinions in a format of "group reports, combined with individual reflection essays." The results show that most of the existing tasks in the master's program could be partially performed using various GenAI-type tools, which in the end "showed different levels of quality and success."

From the analyses listed above, we can see that the few published studies on AI in education are written based on some question marks, sometimes accompanied by modest solutions or by no presentation of any solutions. In our actual paper, we will try to illustrate the projection of some interactive and/or AI-equipped functionalities, as benchmarks that, in our view, should be developed at the level of a possible educational application able to support the didactic assessment process.

3. The AI equipped didactic assessment through the lens of educational management needs

The assessment, being an integral part of any didactic process, represents a sequence of staged actions which, although subject to certain principles, are alive and dynamic both thanks to the continuous development of the fields of educational sciences, docimology theories (the term docimology in English means "a treatise on the art of testing, as in assaying metals, etc.", while in other modern languages, such as French, Romanian, and Italian, it is recognized as a scientific term related to education and didactics.

This field of study analyzes the didactical assessment: the methodology to measure and give the grades to the learners; the exam and test results interpretation, etc.), and methodologies, particular didactics, as well as of the many methods and/or procedures and/or educational strategies, but also digitized tools. All this determines the assessment structure as being responsible for the process of

measuring the performance/success of the learner in the final phase.

The science called Docimology has as an object of research the examinations and competitions. Docimology appeared from “dokimè” (test) and “logos” (science) and finds its origin in the paper about the validity of the grading systems by the French psychologist Henri Piéron. In this context, Henri Piéron proposed the concept and launched research around the results of the primary school certificate in 1922.

After, these would be popularized by his book *Examinations and Docimology* published in 1963, followed in 1971 by Gilbert Landsheere ‘s *Précis de Docimologie*. In general, docimology [*< fr: docimology*] (1.) Researches the problems of examining and grading students, and candidates for exams and competitions. (2.) Discipline which systematically studies examinations and competitions, intending to improve their conditions and structure. In similar senses, this notion is used in the French, Romanian, and Spanish scientific papers in the Pedagogical, Physiological, and Didactical scientific papers.

In the opinion of some researchers (Oliveira and Lenartovicz, 2018) „According to the epistemological historical development, a numerical quantification of the individual’s learning capacity was required through docimology [...]”.

That measurement involves assigning numbers or qualifications to the products of the learner's learning-teaching-assessment-self-assessment activity in strict dependence on the agreed rules. The products of the assessment activity can be tangible or intangible (cognitive).

Thus, the measurement imposes a relationship of correspondence between the abstract concepts of number or qualification and certain empirical indicators, either discovered by checking the performance of students or determined at the conceptualization stage of the assessment in grid tests, assessment subjects, sets of exercises or problems, etc.

So, we can formulate the first principle very close to the idea launched by Stan (2001), according to which “[...] the assessment is equally an activity of measurement, of estimating a level of congruence, and of judging a performance” of the one on which the didactic act is centered.

The second principle states that the assessment of a learner's academic success should be made against one of the following benchmarks by reference to: (1.) the performances demonstrated by the assessed person at the previous stage or stages; (2.) the level of the academic group of which the assessee is a part; (3.) the standards reviewed in the curricular documents of the subject in which the assessment is carried out.

According to the third principle, no one will ever be able to assess the learner's performance with absolute objectivity. That is, in any assessment that is planned, designed, carried out, or assisted by the human factor, the teacher will

always retain a certain degree of subjectivity.

The four principle of didactic assessment claims, with which we fully agree, that at a given moment only the current performance (here and now) of the learner and not the teacher, as a gifted individual, can be assessed by a complex set of qualities, mental faculties, skills, competencies, skills, knowledge, etc.

Thus, having analyzed the sources mentioned in the review of the current material, we consider it necessary to point out the mandatory presence of the following functionalities as important facilities to be introduced in an interactive framework of an educational application. In our opinion, these should be:

- A. The set of functions that ensure the assessment management (i.e., the processes and actions responsible for running the didactic assessments) (see Figures 1–5):
 - Management functionality: of the class of students or sample of students from an academic group or academic groups involved in the assessment process (see Figure 1);

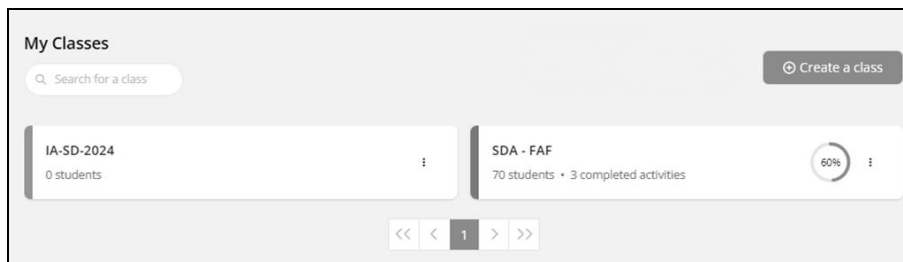


Figure 1. Display of the academic entities to which the assessed belong; there are two large lecture courses from various university specialties here

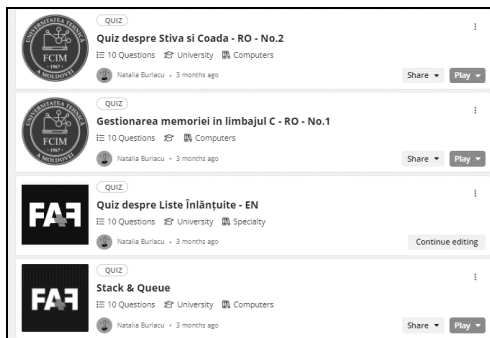


Figure 2. Contents of the administration panel showing all assessment topics

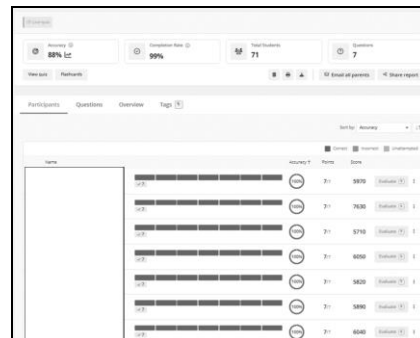


Figure 3. Display of success rate, per student, within a single assessment subject in the same lecture class

- The management functionality of didactic assessment subjects to be distributed either to: the class of students; the sample of students from

an academic group; or the academic groups involved in the entire assessment process of the same university course (see Figure 2);

- Functionality for recording the assessment progress, accompanied by automatic scoring, as appropriate; or the management of progress in the assessment (see Figure 3);
- The transparency functionality of the dynamics of the assessment process in progress or the management transparency of the didactic assessment in progress; i.e., the visualization accompanied by the case with the immediate display of the recorded responses of those who learn, in a "here and now" regime for which there is also a general record panel that can be shared by the teaching staff during the performance of the assessment subject (see Figures 4-5).



Figure 4. The access panel to the subject of the assessment and the access code are displayed in numerical format, as well as by QR Code

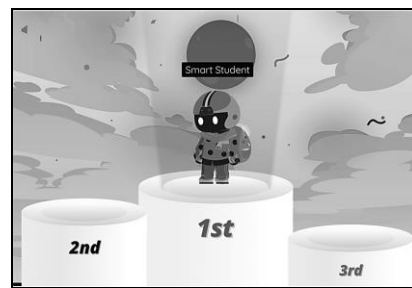


Figure 5. Display of test run results on the general screen, which can be followed by each participant

- A. Functionality set for reporting the didactic assessment results (see Figures 5-7).
- B. The functionality to report the results of the assessment per student/students and / or group/groups of respondents and/or per set of assessments (see Figures 5-7).

Participant	Score	Points Out of 7	Q1	Q2	Q3	Q4	Q5	Q6	Q7
			87%	89%	87%	83%	87%	89%	90%
	5970	7 (100%)	✓	✓	✓	✓	✓	✓	✓
	7630	7 (100%)	✓	✓	✓	✓	✓	✓	✓
	5710	7 (100%)	✓	✓	✓	✓	✓	✓	✓
	6050	7 (100%)	✓	✓	✓	✓	✓	✓	✓
	5820	7 (100%)	✓	✓	✓	✓	✓	✓	✓
	5890	7 (100%)	✓	✓	✓	✓	✓	✓	✓
	6040	7 (100%)	✓	✓	✓	✓	✓	✓	✓

Figure 6. The application dashboard shows the score and rating of the highest-achieving students in an assessment test

	3320	4 (57%)	✓	×	✓	×	✓	×	✓
	3290	4 (57%)	✓	✓	×	×	✓	×	✓
	2350	3 (43%)	✓	✓	×	×	✓	×	×
	2510	3 (43%)	✓	×	×	✓	×	✓	×
	2660	3 (43%)	×	×	✓	×	✓	×	✓
	2080	3 (43%)	×	✓	✓	×	×	✓	×
	1940	2 (29%)	×	×	✓	✓	×	×	×
	1930	2 (29%)	×	×	×	×	✓	✓	×
	960	1 (14%)	×	×	×	×	×	×	✓
S U (S U)	0	0	!	!	!	!	×	!	!

Figure 7. The application dashboard shows the scores and ratings of average-to-low students in an assessment test

- The functionality to report the assessment results:
 - Either they are accessible only on the board of the teaching staff and/or the senior manager and/or assistants of the study discipline who could or should be able to display the academic situation of the learner (see Figures 5-7);

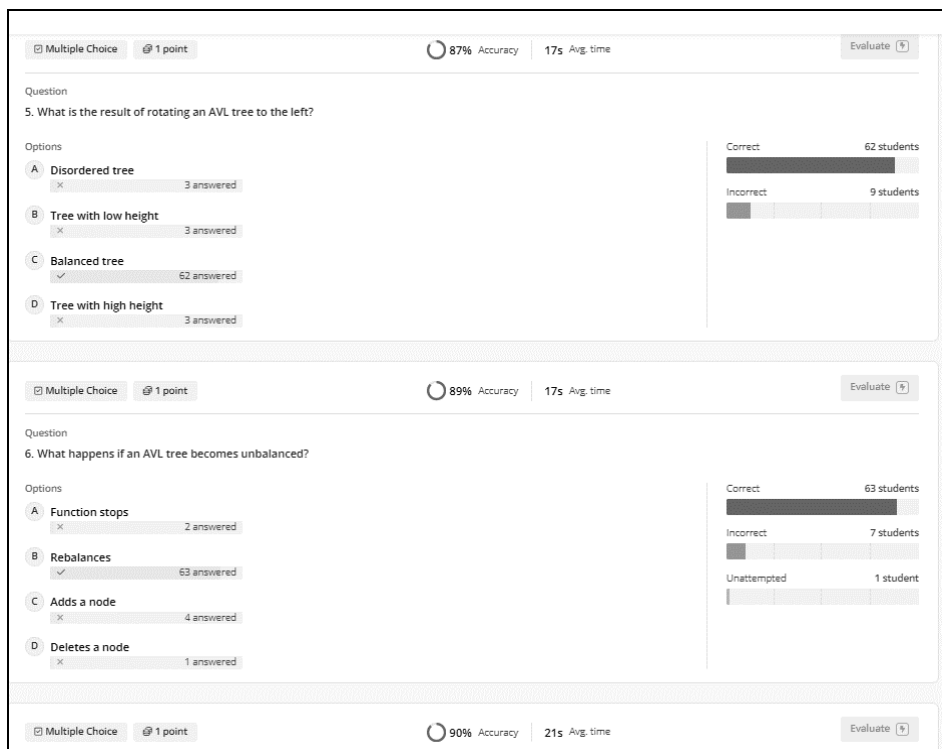


Figure 8. The dashboard shows the success rate, expressed in %, per question and item for an assessment subject

- It can either be shared, displayed, kept as evidence of the learner's progress, and /or presented upon request in the event of the need to provide feedback or a grading decision to the student, parent, institution administration, etc. (see Figures 5-7);
- The functionality to report the results of the assessment per content item; see what success rate each item/question formulated in the test had, etc. (see Figure 8).

That is, the respective functionality represents an AI tool that assists the process of recording the assessment progress and indicates the success rate of each item of the assessment subject accessed and already run, this being expressed in percentages, %. The given tool allows the teaching staff to analyze post-factum the way the item was formulated, its degree of difficulty, etc., these being related to the rate of correct answers. The specified functionality is important because it allows the teaching staff or manager to intervene as necessary with some corrections to the content of the item, either for reasons of complexity or for reasons of equivocal formulation and/or erroneous setting.

4. Conclusions

At the end of the research, we can state with confidence that this work has managed to include both the theoretical aspects related to the integration of AI in educational management, applied in didactic assessment, as well as pragmatic guidelines regarding the possible functionalities of some digital products intended for didactic assessment and designed in strict accordance with the needs of educational management.

For the most part, the named examples should be perceived as illustrative and methodological projections or benchmarks created and implemented in the university environment during the study of the Data Structures and Algorithms (DSA) course in the 1st year of the study programs: Software Engineering, Applied Informatics, and Data Science from the Technical University of Moldova in the 2023-2024 academic year.

The content of ideas, reflected in the previous examples, is the inspired result of the analysis of several educational applications that respond to the themes formulated for our research, and these can be additionally adapted to the rigors dictated by the standards of particular didactics as well as of the educational management field.

REFERENCES

Al-Ababneh, H. & Alrhaimi, S. (2020) Modern Approaches to Education Management to Ensure the Quality of Educational Services. *TEM Journal*. 9, 770-778. doi: 10.18421/TEM92-46.

Balmuş, N. & Burlacu, N. (2017) Manualul interactiv de informatica - repere metodologice de realizare și implementare în procesul de instruire. In: *The Processing of the 9-th International Conference of "Microelectronics and Computer Science" & the 6-th Conference of Physicists of Moldova. 19-21 October 2017, Chisinau, Moldova. Organized by TUM, ASM, etc.* Editors: I. Tighineanu, 2017. pp. 369-370.

Burlacu, N. (2012a) Proiectarea softwarelor educaționale pentru studierea matematicii în ciclul primar. In: *Culegerea lucrărilor Conferinței Internaționale "Telecomunicații, Electronică și Informatică". 17-20 May 2012, Chișinău, Moldova.* Volumul II. pp. 415-418.

Burlacu, N. (2012b) Studiu de elaborare a unui software educațional pentru învățarea lecturii expresive. In: *Materiale din a X-ua Conferință Națională de Învățământ Virtual „VIRTUAL LEARNING – VIRTUAL REALITY. Tehnologii Moderne în Educație și Cercetare. MODELS & METHODOLOGIES, TECHNOLOGIES, SOFTWARE SOLUTIONS”, 2-3 Novembre 2012, Brașov, România.* Editura Universității din București. pp. 174-180.

Burlacu, N. (2013) Produsele educaționale "DicEl" și "RecitalMaster": aspecte de elaborare și implementare pentru studierea limbii române în școala națională. In: *Materiale din a XI-ua Conferință Națională de Învățământ Virtual „VIRTUAL LEARNING – VIRTUAL REALITY. Tehnologii Moderne în Educație și Cercetare. MODELS & METHODOLOGIES, TECHNOLOGIES, SOFTWARE SOLUTIONS”, 25-26 October 2013, București, România.* Editura Universității din București. pp. 237-243.

Burlacu, N. (2014). Dimensiuni informațional-tehnologice și psihopedagogice ale softwarelor educaționale. *Univers Pedagogic.* 4(44), 33-41.

Burlacu, N. (2015a) Analiza comparată a softwarelor educaționale din perspectiva formării competențelor. *Revista de Științe Socioumane.* 1(29), 79-92.

Burlacu, N. (2015b). Optimizarea procesului didactic prin intermediul software-lor educaționale de concepție proprie. In: *Materiale din a XIII-a Conferință Națională de Învățământ Virtual „VIRTUAL LEARNING – VIRTUAL REALITY. Tehnologii Moderne în Educație și Cercetare. MODELS & METHODOLOGIES, TECHNOLOGIES, SOFTWARE SOLUTIONS”, 31 October 2015, București, România.* Editura Universității din București. pp. 158-165.

Burlacu, N. (2016a) *Aspecte metodologice ale elaborării și implementării software-lor educaționale: perspective de formare a competențelor transversale digitale.* Chișinău, Tipografia UPS "Ion Creangă".

Burlacu, N. (2016b) Elaborarea, implementarea și aria de aplicare a jocurilor didactice digitale de tip "Crossword". In: *Materiale din a XIII-a Conferință Națională de Învățământ Virtual „VIRTUAL LEARNING – VIRTUAL REALITY. Tehnologii Moderne în Educație și Cercetare. MODELS & METHODOLOGIES,*

TECHNOLOGIES, SOFTWARE SOLUTIONS”, 29 October 2016, București, România. Editura Universității din București. pp. 93-99.

Burlacu, N. (2016c) Învățarea centrată pe student în formarea profesională la specialitățile de Informatică și Tehnologii Informaționale. *Revista de Științe Socioumane*. 1(32), 45-52.

Burlacu, N. (2019) Skills Development with Educational Software: An E-Ecosystem Model (Chapter 8). In: Railean, El. (ed.) *Handbook of Research on Ecosystem-Based Theoretical Models of Learning and Communication*. pp. 139-153. doi: 10.4018/978-1-5225-7853-6.ch008.

Burlacu, N. (2020a) Applied Digital Competences in the Innovative Didactic Methods: an overview study. In: *The Processing of the 15th International Conference on Virtual Learning, 31 Octombrie 2020, București*. România. Editura Universității din București. pp.166-172.

Burlacu, N. (2020b) Soluții IT pentru educația la distanță: realitate între concept și aplicabilitate. In: *Materialele Conferinței Naționale de Învățământ Virtual, 31 October 2020, Suceava, România*. Editura Universității din București. pp.97-105.

Burlacu, N. (2020c) Virtual classroom in the digital age: concept, product and applicability. *Journal of Social Sciences*. III(3), 11-17.

Burlacu, N. (2021a) Aspects of assessment of students' activity in the seminar classes: problems and solutions. *Journal of Social Sciences*. IV(4), 63-74.

Burlacu, N. (2021b) Didactic transformations of the distance educational process in universities in engineering in (post) pandemic times. In: *The Processing of the 17th International Scientific Conference eLearning and Software for Education Bucharest, 22-23 April 2021, București*. România. Publisher: Adl Romania. 1. pp. 352-361. doi: 10.12753/2066-026X-21-045.

Burlacu, N. (2021c) Digitalization of university courses in the focus of educational management. In: *The 16th International Conference on Virtual Learning, 20 November 2021, București*. România. Editura Universității din București. 16, pp. 23-32.

Burlacu, N. (2021d) Elemente de dezvoltare și management ale unui curs plasat pe Moodle. In: Burlacu N., Ababii V., Ciorbă Dm. etc., *Soluții pentru studii online în învățământul universitar ingineresc. Ghid de bune practici: Din experiența cadrelor didactice FCIM*. Chișinău, Editura “MS Logo” SRL, pp. 32-43.

Burlacu, N. (2021e) Evaluarea pe Moodle: de la idee la aplicare. În: Burlacu N., Ababii V., Ciorbă Dm. etc., *Soluții pentru studii online în învățământul universitar ingineresc. Ghid de bune practici: Din experiența cadrelor didactice FCIM*. Chișinău, Editura “MS Logo” SRL, 70-85.

Burlacu, N. (2022a) Capstone Project: From Theory to Practice. In: *The Processing of the 17th International Conference on Virtual Learning, 25-26 November 2022, București, România*. 17, pp. 63-75. doi:10.58503/icvl-v17y202205.

Burlacu, N. (2022b) Multilaritatea procesului de evaluare a studenților în condițiile studiilor hibrid și / sau online [Multidimensionality of the student assessment process in the conditions of hybrid and / or online learning]. *Revista științifică - Studia Universitatis Moldaviae. Stiinte ale educatiei*. 5(155), 87-95.

Burlacu, N. (2022c) Procesul didactic digitalizat: viziuni și perspective privind managementul educațional. *Akados, Revistă de știință, inovare, cultură și artă*. 1(64), 86-93.

Burlacu, N. (2023a) Antifraud protection in learning outcomes assessment: from didactic requirements to technological solutions. In: *The Processing of the 18th International Conference on Virtual Learning, 26-27 October 2023, Bucharest, Romania*. 18. pp. 43-56. doi:10.58503/icvl-v18y202303.

Burlacu, N. (2023b) Fisa digitală de evaluare a rezultatelor învățării. România. In: *Materialele Conferinței Naționale de Învățământ Virtual, CNIV 2022, 25-26 Noiembrie 2022, București, România*. Editura ICI. 20. pp. 31-40.

Burlacu, N. (2023c) Potențialul transformator al Inteligenței Artificiale asupra educației secolului XXI. In: *Materialele Conferinței Naționale de Învățământ Virtual, CNIV 2023, 26 - 27 Octombrie 2023, București, România*. Editura ICI. 21. pp. 27-38.

Burlacu, N., Balmuș, N. & Bostan, M. (2019) Suport digital interactiv pentru predarea-învățarea cursului universitar "Algoritmi Numerici și Structuri de Date". In: *Materialele conferinței științifice anuale a profesorilor și cercetătorilor UPS „Ion Creangă”*. Chișinău, Rep. Moldova. Tipografia UPS "Ion Creanga", 2019. pp.307-319.

Davey, B. & Tatnall, A. (2005) Educational Management Systems and the Tutorial Class. In: Tatnall, A., Osorio, J., Visscher, A. (eds). In: *Information Technology and Educational Management in the Knowledge Society. ITEM 2004*. IFIP International Federation for Information Processing. Vol. 170. Springer, Boston, MA. doi:10.1007/0-387-24045-4_12.

Lachman, M. E. (2001) Adult Development, Psychology. Editor(s): Neil J. Smelser, Paul B. Baltes. In: *International Encyclopedia of the Social & Behavioral Sciences*. Pergamon. pp. 135-139. doi:10.1016/B0-08-043076-7/01650-8.

Mozelius, P. (2024) Generative AI and Assessment in Higher Education – The Student Perspective. In: *The 2nd Symposium on AI Opportunities and Challenges, SAIOC 24, 18th June 2024, Sweden* [Preprint] https://www.researchgate.net/publication/381512251_Generative_AI_and_Assessment_in_Higher_Education_-_The_Student_Perspective [Accessed 19th July 2024].

Oliveira, A. & Lenartovicz, L. (2018) School Evaluation: A Possible Dialogue between the History and Epistemology. *Open Journal of Social Sciences*. 6, 179-189. doi: 10.4236/jss.2018.68014. [Accessed 10th July 2024].

Riegel, C. (2024) *Leveraging Online Formative Assessments Within the Evolving Landscape of Artificial Intelligence in Education*. doi:10.1007/978-3-031-56365-2_18.

Rizescu, M., Bucăța, G. & Herman, R. E. (2020) The Impact of the New Educational Management in Schools. In: *International conference Knowledge-Based Organization*. 26(1). pp. 257-262. doi:10.2478/kbo-2020-0041.

Stan, C. (2001) *Autoevaluarea și evaluarea didactică*. Cluj-Napoca, Editura Presa Universitară Clujeană. 207 p. ISBN-9738095921.

Topciu, S. D. (2020) Early Adolescence Today: A Theoretical Approach to Particularities and Challenges. *Open Journal for Sociological Studies*. 4(3), 153-160. doi:10.32591/coas.ojss.0403.03153.

Uygun, D. (2024) Teachers' perspectives on artificial intelligence in education. *Advances in Mobile Learning Educational Research*. 4(2024), 931-939. doi:10.25082/AMLER.2024.01.005.

Wang, D., Yang, D. M., Zhou, H., Wang, Y., Hong, D., Dong, Q. & Song, S. (2020) A Novel Application of Educational Management Information System based on Micro Frontends. *Procedia Computer Science*. 176(2020), 1567-1576. doi:10.1016/j.procs.2020.09.168.

Wojtaszek, H., Swieczarz, G., Miciuła, I. & Wójcik-Czerniawska, A. (2023) Integrated approach to education management: Innovative strategies and methods in combining pedagogy and management in a modern school. *Journal of Modern Science*. 4. 592-621. doi:10.13166/jms/176681.

