Mechanisms for Objectivity Ensuring and Fraud Prevention in the Online Academic Assessment

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Abstract

Keywords:
academic assessment and evaluation; evaluation strategy; assessment methodology

The recent online teaching experience we all were forced into during the pandemic period made us reflect on the existing teaching practices and their efficacy, while imposing on finding new ways, roles and functions for the classical teaching, learning and assessment activity. Academic assessment in particular proved to be a challenge in the sense that new and unexpected isses had to be managed. While the use of digital platforms offered support for new assessment and evaluation strategies, including improved feedback and ways of tracking students' development, sensitive issues such as that of avoiding exam fraud risks, and the need for improving evaluation validity and authenticity appeared. The present paper offers an insight on university students' and teachers' perception on academic assessment, its added value and risks. It also provides some empirical proves for the need of integrating valuable lessons from the online evaluation experience and transfer them in hybrid and onsite academic education process.

Zusammenfasung

Schlüsselworte:
wissenschaftliche Beurteilung und Bewertung; Bewertungsstrategie; Bewertungsmethodik

Die jüngsten Online-Unterrichtserfahrungen, zu denen wir alle während der Pandemie gezwungen wurden, veranlassten uns, über die bestehenden Unterrichtspraktiken und ihre Wirksamkeit nachzudenken, während wir gleichzeitig neue Wege, Rollen und Funktionen für die klassische Lehr-, Lern- und Bewertungstätigkeit finden mussten. Es liefert auch einige empirische Beweise für die Notwendigkeit, wertvolle Lehren aus der Online-Evaluierungserfahrung zu integrieren und sie in hybride und vor Ort stattfindende akademische Bildungsverfahren zu übertragen.

1. Theoretical background

In the educational use of the computer and of the Internet, the main challenge is that of developing an adequate context of learning. In fact, the recent literature on the topic (UNICEF) is unanimous is arguing that the educational use of the new technologies of information and communication has the potential of facilitating an accent shift from the teaching and teacher's work on a learning and learner-focused approach. This potential must be considered in the design of technology-based teaching situations.

One of the main advantages of the technology-based education is that in the remote teaching the school is the one that comes towards the learner with its offer of learning contents and activities that cand be delivered in a technology mediated manner. The virtual classroom that is created (Glava, 2009) includes the means for fostering the students' communication and cooperation as well as the classical learning behaviors such as extensive reading and abilities exercising (Raes et al., 2020).

The digital platforms as milieus of virtual classrooms redefine the roles teachers and students undertake. The student's activity modifies mainly from the perspective of the degree of their direct involvement and self-management. The at-distance presence of the teacher implies a higher degree of self-responsibility at students' part. Teacher's role is also changing towards the teacher as the leader of student's learning activities, coordinator and moderator, administrator of the virtual learning environment and supervisor of students' increasingly autonomous learning. Compared with the computer assisted instruction, the e-learning offers a whole new interface of the teacher-student- learning contents interactions and connections. (Leinenbach, 2007).

It is the new computer - facilitated learning that urges teachers to reconsider and renew their educational design abilities as well as to enrich their classroom management skills (Glava, 2009). A new habilitation of teachers on digital skills is an imperative. The new expertise must lead to the reconsideration of some of the characteristics of all the other didactic actions and components. This is the vision promoted by the recent DigCompEdu (2017) model (Redecker, C., 2020) which offers new benchmarks for teaching, learning, evaluation, institutional and classroom organization, in the light of digital competences use.

Moreover, after the integration of Covid 19 pandemic and of the remote teaching experience, the need to reconsider the initial and the continuing teacher training for insuring their much-needed digital expertise (Adăscăliţei, Dumitrescu & Braşoveanu, 2004) becomes even more obvious.

One of the most debated actions that are significantly altered in the online teaching is the academic evaluation. More precisely, there is a great debate on the functions, principles and practical solutions for insuring an objective evaluation in the online conditions. In higher education, the debate is even more relevant as most of the academic disciplines include a final examination that is usually undertaken in a written or oral form. The portfolio or practical tasks based academic evaluation is rarer and considered usually as a complementary form of assessment. Moreover, the academic evaluation is focused on the assessment of specific professional skills that impose particular forms of evaluation, and the switch to the online evaluation may rise difficulties in the appreciation of some of the professionally required knowledge and skills, a situation that imposes a special attention on the design of the online evaluation situations.

Despite the precautions related to the topic, we observed the development of a tendency for understanding and using the main characteristics of the online academic evaluation that are:

- The interface with the students is a mediated one. The mediators are the virtual milieu, the physical distance, the limited control over the evaluation context, the limited options for a visual and auditory feedback.

- The connection with the student is dependent of concrete technical conditions and skills of the users

- The awareness of the inherent risks of evaluation induces sometimes an exaggerated precaution with possible negative effects on the actual conditions of evaluation.

- The online evaluation is an opportunity for the development of the digital and pedagogical competences

- Certain advantages of the online evaluation should be valued (the centralized delivery of evaluation items, transparency of the evaluation procedure, the options for the evaluation data and proves preservation and use, more options for the formulation of evaluation tasks by including authentic texts and data, different ways and types of providing feedback, option for tracking students' progress etc. JISC-Joint Information Systems Committee, UK, 2010; MeritTrac, India, 2020).

As a response to this tendency, we argue for the necessity of redefining the traditional academic evaluation strategy. Namely, we support the idea of a strategic approach to the online academic evaluation by devising a specific functional vision that has as a central element the integration of evaluation with teaching and learning.

2. For an online academic evaluation strategy

The strategic approach of the evaluation in higher education represents a quality principle attentively approached in the international and national institutional and programs of study appreciation (eg. National Agency for Quality Assurance in Higher Education). By defining an evaluation strategy for his/ her courses, the university teacher declares own understanding on the status and rigors the evaluation must illustrate. The evaluation strategy may lead the evaluator in being consistent and coherent in the decision-making process related to the assessment of students' performances. Moreover, once defined, the evaluation strategy may be promoted at the level of students with important consequences for encouraging their self-regulation and self-evaluation.
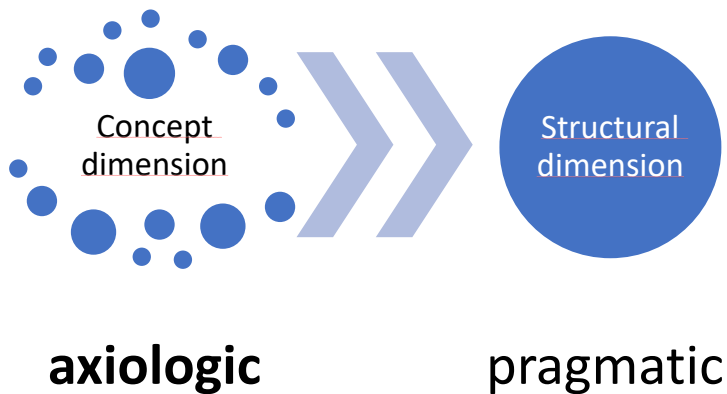
The assessment strategy must include elements grouped in two dimensions: the concept dimension and the structural dimension.

The *concept dimension* is a vision based one and includes the believes and understandings of the teachers on the relevance and status of the assessment actions and processes. It defines the values and main

principles the teacher understands to follow in the evaluation and students' assessment actions.

The vision on evaluation is made operational through its *structural dimension* (fig. 1) that includes the forms, methodology, actions and benchmarks according to which the evaluation actually takes place.

Figure 1. Evaluation concept and dimension

axiologic   pragmatic

The elaboration of a personal assessment strategy implies the *self-questioning* of own conceptions on the relevance and significance of the academic evaluation. Thus, at the conceptual level relevant questions are: *Why do I evaluate (in an online setting)?* And *What learning outcomes do I assess (in an online setting)?* The first question implies defining the roles of evaluation. In the university evaluation must go beyond the immediate role of marking students' performances and making hierarchies, towards supporting and forcing students' learning and helping self-regulation of learning. Second question refers to the types of learning outcomes we intended and must or prefer to evaluate. On this topic, special attention must be directed towards harmonizing teaching with evaluation as performances on certain intended learning outcomes must be prepared through adequate teaching and support for learning. Evaluation must be regarded as a intrinsic part of the educational process. Using it just as a final sequence implies giving it a marginal role. Another topical issue in this context is the evaluation of the transversal competences together with the professional learning outcomes, as the professional profiles of most of the academic training programmes include both professional and transversal knowledge and skills.

One option that seems to have more potential in the online teaching context is to increasingly focus the evaluation on assessing students' capacity to use their learning acquisitions in problem solving and authentic tasks. In this respect, the good use of digital applications may lead to formulation of evaluation tasks that put students to group work, to compete or to prove their soft skills together with their professional knowledge. William Daggett's Framework of Learning Rigor and Relevance (2016) offers a good structure for reflecting on both the depth of knowledge and the applicative power of the acquired knowledge. Thus, the self-questioning action receives a topical nuance, that of shifting towards an actual perspective supported by Webber (2012) of the **evaluation as a means for supporting students' learning.**

As for the structural dimension of the evaluation strategy, the literature insists on ensuring what Biggs (1983) developed as the *constructive alignment*, by targeting the evaluation of the intended learning outcomes. The current approach to the learning outcomes (CEDEFOP, 2017) describes the intended results in terms of competences: 'statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence' (CEDEFOP, 2017. p. 29). Consequently, the academic evaluation should be competences focused, an approach that implies involving different forms of evaluation with a special accent on the formative and continuing evaluation.

The question *How do we evaluate (in an online setting)?* highlights the key element of the evaluation strategy that is the **assessment methodology**. The general recommendation for using a diversity of evaluation methods and instruments that could support different forms of assessment becomes increasingly possible in the online context. The various digital applications that are open for free use offer relevant frames and functions that may be crafted to support different evaluation tasks that add value to the assessment strategy by:

- Allowing for the evaluation of new learning outcomes such as personal points of view, attitudes and emotional responses to professional topics. A good example in this respect could be using the functions of Mentimeter, Socrative or Slido for" hearing" students' voices.

- Offering support for creative evaluation tasks and products: StoryBoard: https://www.storyboardthat.com/ro, , Dotstorming www.dotstorming.com

- Providing cognitive organisers for elaboration of mind maps: reasons.io, http://www.mindmup.com, Thinglink https://www.thinglink.com/

Involving students in deeper information processing and in elaboration on knowledge: Miro www.miro.com.

3. Method

Given the potential advantages, limits and risks of the online evaluation, we initiated an exploratory study with the intention to explore both university teachers' and students' perception on the specificity academic evaluation has when implemented in a virtual environment. The research design was mixt with quantitative and qualitative actions that implied a questionnaire-based survey addressed to both teaching staff and students of different academic level: bachelor, masters and doctorate. The questionnaire was meant to target participants' opinion on the entre didactic activity delivered online. Out of the 21 items of the questionnaire we focused on the three items that referred to the online evaluation:

Q13: Give some concrete examples of good practices that could ensure the objective online evaluation of students' performances;

Q14: In your opinion, which would be the most effective measures that could help avoiding the fraud in the online exams?

Q15: Give examples of effective feedback messages for the students after the online examinations.

The convenience sample was randomly selected to represent the entire country and included a number of 1245 answers. The respondent participants were in a proportion of 11.49 teaching staff, and 88,51 % were represented by students in all three levels of academic education> bachelor, masters and doctorate. Both teaching staff and students represented a total of six academic fields> Mathematics and Nature Sciences, Engineering, Biology and Biomedical Science, Social Sciences, Humanities and Arts, Sport Science and physical education.

4. Findngs

We selected three open questions and we performed a qualitative analysis of the answers, aiming for delineating the general tendencies and for capitalizing on the most frequent solutions and examples mentioned in the answers.

A large majority of answers regarding the risk of exam fraud referred to solutions of technical and pedagogical nature. 92% of students offered practical fraud avoidance solutions that we will synthetically present further on in the text. The percentage of teachers that offered solutions for the reduction or removal of the exam fraud was of 85%. The difference between students and teachers in the number of answers is probably related to the fact that teachers are more reluctant and reserved on discussing the efficacy of the online evaluation while students approach the subject with enthusiasm and sometimes constructively.

Answers registered in Q15 that referred at the use of assessment results in providing feedback for students. In a significant percentage of 96%, students and 91% teachers stated that feedback delivery is very much facilitated by the online use of teaching platforms The majority of students' answers (72%) included concrete examples of feedback received form teachers via the electronic platform, while in the traditional situations sometimes the feedback was totally absent, except the actual mark awarded.

In their turn, teachers mentioned the facilities platforms have for offering constructive feedback in a simpler and more direct way then in the traditional situations. This is regarded as a way of increasing their use of post-evaluative feedback.

Teachers included reflections in their answers on the risks that the online evaluation imply and this is a side information which we considered relevant. Some of the risks mentioned, apart from, but in relation with the exam fraud were:

- Technical problems that can facilitate the fraud;

- The increased exposure of teachers that may be registered, of have the message altered or distorted;

- The cyber-bullying risks related to the behaviors of students on the exam;

- The transparency of the evaluation procedure that can be speculated in negative purposes.

These risks have the potential to put teachers in the position of being excessively cautious and apprehensive or, on the contrary, too permissive. They also are in the risk of exclusively using close, objective evaluation items that would only test the recognition of the right answer capacity. Teachers experience the

frustration of not being in control and of not having a complete sense of coherence in their didactic activity.

Students and teachers answer on increasing the objectivity of evaluation and reducing the risk of exam fraud included very useful solutions oriented more on the technical measures that could be undertook in managing the exam itself, in case of the students and on different type of evaluation methods and tasks, in case of teachers.

Mainly answers referred to an increased rigor in the technical delivery of the exam: implementing solutions of eye-tracking, sound-catcher type or solutions of technical backup such as alternative ways of sending the answers, communicating, or ensuring the energy supply for the electronic devices.

Answers included practical technical solutions such as:

• Removal of the thinking time prior to an oral online examination;

• Option of handwriting in answering the redactional items, for a better time use in written online examination;

• Use of continuing evaluation along the semester with mark points awarded for activism during courses, study initiatives and classroom presentations etc;

• Use of" open books" evaluation where students must prove the capacity to strategically use their knowledge and skills for problem solving and other application tasks;

• Use of oral evaluation through direct questioning and instant answers that allow for a permanent video and audio connection;

In their turn, teachers focused their answers mainly on different methods of assessment. The most frequent answers were related to evaluation tasks that ask for elaboration of answers in new forms or/ and their application in relevant and authentic situations. By avoiding reproductive and subjective items some of the important learning outcomes could be tested. Online quizzes with time limit, randomized questions and rapid answers required is also a solution in the view of teachers.

A particular answer had a higher frequency between the contributions of teachers. The portfolio evaluation and the project-based assessment were considered solutions that allow for a continuing

construction of answers and involvement of students during the whole semester.

A more controversial, yet very valuable answer was that related with the necessity of developing a new culture of trust and ethical approaches in the university.

Answers of teachers allow us for drawing a conclusion on the need of increasing the validity of the evaluation in the academic context, and promote what Herrington, Oliver, & Reeves (2006) named authentic evaluation tasks. Thus, the academic assessment could be focused on a strategy that allows for:

• the assessment of different types of learning outcomes (knowledge, skills, attitudes level of responsibility and autonomy, competences)

• the appreciation of students' evolution and development along the semester;

• the better use of evaluation with its learning regulatory function.

Certain online assessment methods are compatible with this type evaluation: project-based assessment use of the e-Portfolio, service-learning tasks, gamification-based learning and assessment, reflective tasks etc.

The answers and reflections provided by the respondents lead us to the conclusion that in case of the online evaluation, some of the solutions and measures must be agreed and promoted at the institutional level by measures such as:

• reducing the pressure of evaluation in relation with the awarding of scholarships and student accommodation;

• ensuring an improved continuity and coherence along the entire programme of study and between academic disciplines through an improved teacher team work;

• academic curriculum development by creating a bank of good evaluation practices;

• implementation of a whole programme of study assessment strategy through articulated actions such as a student development portfolio that includes proves of student's evolution in relation with the intended competences.

5. Conclusions

The online teaching and learning platforms increasingly developed during the pandemic period remain an important support for the hybrid approach to the academic education even in the post-pandemic period. These informatic solutions have some important means for the design of an objective and correct academic assessment, both held in a traditional form and in alternative forms such as those related to e-Portfolios, Canva products, EonXR learning products etc.). Moreover, the use of the learning platforms has the potential to support ensuring the constructive alignment of the intended learning outcomes with the evaluation and teaching approaches, a principle that, once implemented, gives evaluation a better and more functional status.

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References

Adăscăliţei, A., Dumitrescu, C. & Braşoveanu, R. (2004). Elemente de pedagogie specifice e-learning. În Software educaţional. Rezultate recente. Editura Universităţii din Bucureşti.

Biggs, J.B. (1993), „From theory to practice: a cognitive systems approach". *Higher Education Research and Development*, 12 (1): 73-85.

Daggett, W. R. (2016), *Rigor and Relevance Framework. International Center for Leadership in Education*, Disponibil la: http://leadered.com/our-philosophy/rigor-relevance-framework.php

European Commission/EACEA/Eurydice, 2021. *Teachers in Europe: Careers, Development and Well-being.* Eurydice report. Luxembourg: Publications Office of the European Union.

Glava, C., (2009) *Formarea competenţelor didactice prin intermediul e-learning. Modele teoretice şi aplicative*, Ed. Casa Cărţii de Ştiinţă. Cluj-Napoca,

Herrington, J., Oliver, R., & Reeves, T. C. (2006). Authentic tasks online: A synergy among learner, task and technology. *Distance Education, 27*(2), 233–248.

JISC (2010). *Effective assessment in a digital age: A guide to technology-enhanced assessment and feedback,* http://www.webarchive.org.uk/wayback/archive/20140614115719/http://www.jisc.ac.uk/media/documents/programmes/elearning/digiassass_eada.pdf

Leinenbach, J. (2007). eLearning Management. A Handbook for Teachers, Trainers an Managers in Learning Organisations. Iaşi, Polirom.

MeritTrac (2020). *What is Online Evaluation System?* https://www.merittrac.com/guides/online-evaluation-system

OECD Reviews of Evaluation and Assessment in Education: Romania 2017© OCDE. http://dx.doi.org/10.1787/9789264190658-en.

Redecker, C., Punie, Y., editor(s), (2017). European Framework for the Digital Competence of Educators: DigCompEdu , EUR 28775 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-79-73718-3 (print),978-92-79-73494-6 (pdf), doi:10.2760/178382 (print),10.2760/159770 (online), JRC107466.

Raes, A., Vanneste, P., Pieters, M., Windey, I., Van Den Noortgate, W. & Depaepe, F. (2020). Learning and instruction in the hybrid virtual classroom: An investigation of students' engagement and the effect of quizzes. Computers & Education, 143, 103682.

Strategia privind digitalizarea educației din România 2021 – 2027, promovată de către Ministerul Educației - SMART.Edu

Webber, K. L. (2012). The use of learner-centered assessment in US colleges and universities. *Research in Higher Education*, *53*(2), 201–228. doi:10.1007/s11162-011-9245-0