

Valorization of Educational Platforms in Teaching-Learning-Evaluation in Romania. Comparative Study

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Abstract

After the suspension of face-to-face activities, teachers used various social media platforms and applications adopted by the educational environment. We comparatively analyzed, from the user’s perspective, several platforms that were used predominantly by teachers both at K-12 and university education. The following platforms were analyzed: Microsoft Teams, Moodle, Wand.education, Livresq, Google Meet and Zoom. We found that in Romania, at the university level, teaching activities for part-time study programs and open distance learning programs, take place formally, on specialized platforms that ensure learning management in compliance with certain rules, but also by providing additional resources by using other applications. In universities, the teaching activities within the study programs with frequency were carried out either on specialized platforms or on videoconferencing platforms and/ or by using other applications and tools. At K-12 level, they used private, informal educational platforms, which offered educational resources, facilities, and tools for their creation and for the integral organization of online teaching activities. If at the university level there is a small degree of sharing of educational resources, visible in the use of platforms, at K-12 level, a greater willingness to share personal experience and a rapid transfer of information are characteristic.

Keywords: COVID-19 pandemic, Educational platforms, University, Pre-university education, Online training

1. Introduction and Theoretical Background

The COVID-19 pandemic forced educational institutions to reinvent themselves in order to overcome the generated crisis situation. In the new teaching-learning scenarios, online teaching is a must, challenging educators to reflect and assess the usefulness of the new technologies (Nuere and de Miguel, 2020). In Romania, especially at the university level, eLearning platforms are

largely used, among the most popular ones being those that encourage collaboration during the educational activities (e.g. those designed by Microsoft and Google) (Edelhauser and Lupu-Dima, 2020). However, online video-conferencing platforms are not fully adapted to the new users' educational needs, particularly in what teamwork is concerned (Peisachovich et al., 2020). Thus, research focuses on identifying the benefits and challenges of distance-learning (Prokopenko and Berezhna, 2020), as well as on the opportunities provided by the digital pedagogy and interactive online learning (Terenko and Ogienko, 2020).

In Romania, after the suspension of face-to-face courses on March 11, 2020, teachers had to find solutions to continue the teaching activities (Botnariuc et al., 2020). They used different social media platforms and applications adopted by the educational environment for communication with students, parents and other teachers, for collaboration: e-mail and groups (Google, Yahoo), instant messaging (IM) (Skype, WhatsApp) (Holotescu and Grosseck, 2014), an approach supported by previous history of using ICT and online education in Romania (Magdaş and Pop, 2015; Magdaş and Răduţ-Taciu, 2016; Manea and Stan, 2016, 2018; Vlada and Jugureanu, 2007; Vlada, Jugureanu and Albeanu, 2011; Vlada, Jugureanu and Istrate, 2009; Vlada et al., 2010). For sharing educational content with users, they also considered other applications such as: social networks (Facebook), Youtube (video sharing), Instagram (image sharing), Prezi and Slideshare (presentation sharing), Scribd (Files/ documents/ books sharing), wiki collaborative spaces (Wikispaces, MediaWiki), Digital storytelling and others (Holotescu and Grosseck, 2014). In the settlements without internet access, the teacher-student communication was done by phone and by innovative methods. For example, the "store" method consists in leaving the worksheets at the village store, in order to be taken over by the parents and taken to the children for solving and be returned later (Andrei, 2020).

In this research, we will analyze comparatively, from the user's perspective, several platforms that were used predominantly by professors and teachers in the context of the rapid transition from face-to-face educational activity to online, a situation in which teachers had to identify and use software solutions and technical ways to ensure the continuity of teaching with university students or pupils.

2. Methodology

Data Collecting, Procedure and Research Material. We collected some of the data through the observation method: the activity carried out by teachers and students on platforms, modalities of log in and communication, platform design, structure, and appearance of the screen during the activity. Data on the use of platforms (operation, difficulties, advantages) we collected through the interview method. We subjected the platforms to a subjective and repetitive analysis regarding structure, tools, facilities, and functionality (Băban, 2002; Ilovan and Doroftei, 2017). The research material consisted of the content provided by the analyzed platforms, the observations resulting from the monitoring of the activities on the platforms and the answers to the questions from the interview.

Participants. In the research, the authors of this study were involved. They were in a position to use for educational purposes various platforms at university and pre-university level, from the perspective of the teacher/professor and of the student. At both levels (university and pre-university) and from both perspectives (professor or student), researchers are actively involved and faced with several challenges.

3. Results and discussions

3.1. Online Learning Platforms

The educational systems presented in various sources use a wide variety of platforms for organizing the online teaching-learning-assessment activity. Whittemore (2020) identified six types of online learning platforms: Learning Destination Sites (LDS), Traditional Learning

Management System (LMS), Open Source Learning Management System, Modern Learning Management Solutions, Learning Management Ecosystems, and Custom-Built Learning Platform.

Learning Destination Sites (LDS) is a shared website that offers courses from several different providers (e.g. Coursera). It provides tools for creating courses, which are then uploaded to the site (Whittemore, 2020). Traditional Learning Management System (LMS) provides means for creating, storing, sharing courses, conducting tests and questionnaires, managing learning, reporting grades and progress, and other simple functionalities required (e.g. Blackboard) (Blackboard, 2020; Hutchinson, 2019; Whittemore, 2020). Open Source Learning Management System is a platform similar to L.M.S, but which offers free functionality for an online course and can be customized (for example, Moodle) (Whittemore, 2020).

Unified Communication and Collaboration Systems (UC&C) are platforms (e.g. Microsoft Teams) that allow information storage, audio and video communication, evaluation, and integration of applications. They have an interface for mobile terminals and can accommodate many users (Microsoft, 2020). Video and Teleconferencing Systems are not like the previous ones but are used for virtual classes due to their ease of conducting synchronous audiovisual virtual meetings (e.g. Zoom). They have limited facilities for personalization, group management, time, or information management, do not offer online feedback or evaluation solutions (Zoom Video Communication, 2020). Studies conducted in Romania during the Covid-19 pandemic claim that most surveyed teachers chose video conferencing platforms as working tools precisely because of their accessibility, freeness, and simplicity of use (Botnariuc et al., 2020).

3.2. Microsoft Teams and Moodle

At Babeş-Bolyai University, both platforms are used, in particular for the organization of open distance learning and part-time education. The activity is managed by the Center for Continuing, Distance and Low Frequency Education, being provided specialized assistance in informatics. In the context of the Covid-19 pandemic, at the institutional level, for full-time study programs, teachers were able to create “virtual classes” independently on the Microsoft Teams platform to ensure the continuity of courses, seminars, assessment activities and more. In parallel with the activity on the two platforms, the teachers used other online platforms or applications (Google Drive, Google Meet, Zoom, Skype, closed Facebook groups, etc.).

Moodle (Modular Object-Oriented Dynamic Learning Environment) is one of the most used Open Source LMS platforms, a Virtual Learning Space. The Moodle project has been under development since 2001, being coordinated by the Australian company Moodle HQ (Moodle, 2020). The platform is free, it is constantly improved, the latest version is from 2010. Microsoft Teams is a unified communication and collaboration system available for a fee (Office 365, \$ 5 per month for each user). It offers a free version (Office 365 E) and a test package, which can be used for 6 months (Microsoft, Microsoft 365, 2020).

From the analysis of the use of these platforms, we found that they are also available for mobile devices (phone, tablet, etc.) and that they allow the secure organization of classes by teachers, students having access only to their class, based on passwords. Compared to conference platforms, students can enter to platform in their group, whenever they want, and outside of scheduled meetings, without requiring direct acceptance from the group organizer.

Both platforms offer tools for organizing teaching-learning activities (lectures, seminars, case studies, debates), evaluation (quizzes with different types of items; the possibility of creating questionnaires), collecting and centralizing answers. The platforms offer tools for the transmission and evaluation of homework, for teacher’s visualizing of students’ written documents and for providing feedback. Both platforms allow uploading interactive and multimedia materials on the platform, recording and saving lessons / courses in the cloud, storing information in the cloud and managing resources (course materials, auxiliary teaching materials, audio or video files).

Both platforms allow audio and video communication but initiating a video session on Moodle is not as intuitive as in Microsoft Teams, requiring some experience and documentation. If the teacher records a video session on Microsoft Teams, the recording is saved in Microsoft Stream and, depending on the option of the record holder, it can be viewed by other people in the institution who are enrolled on Microsoft Teams even if they are not part of that virtual class. Moodle allows fast and efficient communication between users of the platform through Chat or Forum tools, allows the organization of collaborative activities, in which students, working in groups can share their own experiences with others and can learn from each other.

Microsoft Teams provide chat, and the teacher can use or restrict communication, and, if necessary, conduct an interactive chat. The teacher can call any person in Teams even if they do not have the application open and can use or restrict the microphone, as appropriate. From the didactical perspective, both platforms allow share screen by teachers or students. Thus, is possible to share teaching materials with students, using the virtual whiteboard, accessing documents (PowerPoint presentations, word documents, charts, maps, schematic drawings, animated films, and documentaries, etc.) from the computer or from the Internet. Microsoft Teams allows recording, watching, and downloading an audio-video activity carried out on the platform, an important feature in situations where the student has not attended an activity or wants to review the activity.

At the end of the analysis, we mention a few aspects. At distance and low frequency education, the weakness is that the materials uploaded to the platform in one year are archived and must be reloaded the following year. Regarding the didactic activity carried out with the students from the full-time study programs, we noticed that the teachers also used hybrid solutions. In the situation where there were series of students who went through the same study programs in full time or distance/low frequency mode, to increase the volume of resources offered and their access to interactive activities in which students have different levels of competence (student, novice, who were preparing to become teachers and senior teachers in education), all students had been included in closed groups on the social network Facebook. For the written assessment, some teachers took tests in Google Forms, and for oral assessments, they used video conferencing platforms on Zoom or Google Meet and other applications. To increase the efficiency of the activity, both from the perspective of the professor and the students, it would be preferable to use a single platform, for the student being difficult if each teacher uses different e-learning solutions.

3.3. Wand.education and Livresq

For the pre-university level, we chose these two platforms that we frame at Learning Destination Sites (LDS), both of which are shared websites that offer educational resources from many different providers.

Wand.education is an online educational platform created for teachers who are looking for a solution that is easy to adopt in the teaching process, fast and creative in producing educational content for teaching and assessment. Wand.education™ was launched by Siveco Belgium, the Brussels subsidiary of Siveco Romania S.A. (Siveco, 2020). The platform is available in English and Romanian. The platform is constantly updated. Starting with December 5, 2016 (Siveco, 2020), teachers were able to create their Wand Create account permanently free of charge, thus having immediate access to 512 Mb of storage space (for 15+ learning activities, Student Groups), Multimedia Resource Library, at the Lesson Library created by other teachers, at the Learning Reports. The platform offers tutorials that guide the teacher in using this platform. In 2018, the House of Teaching Staff Bacău organized: “Design, development and evaluation of learning activities using virtual platforms; Wand” training courses. There are over 5,000 Romanian teachers who use this platform for free (5th May 2020) (digitaledu, 2020).

LIVRESQ is an online platform for the creation, publication, editing, consultation and online management of interactive digital textbooks, books, and materials. It was created by Ascendia S.A. and launched on August 6, 2019 in Bucharest (Ascendia S.A., 2020). The platform is constantly updated. Teachers can create a free livresq account for a year. The teacher receives support from the technical team but can also access various tutorials that present the LIVRESQ platform and how to work. Between the 1st of March 2020 and the 1st of July 2020, teachers from over 4,000 educational institutions created accounts on the platform and published 1,409 interactive lessons (ElearningRomania, 2020). Lessons made in LIVRESQ can be published on school websites, in learning platforms, in blogs, and can be downloaded for use without the Internet. The LIVRESQ virtual library contains lessons published free of charge by teachers. These lessons can be used by any teacher in teaching, without the need to create an account on the platform. The certification program “Creator of educational software LIVRESQ” for teachers has been launched (Ascendia S.A., 2020). Following the publication of three lessons on this platform, teachers receive a software creator certificate.

Both platforms are available for computer, android, and tablet. Educational resources are stored in the library. From here the teacher can choose, download, and edit lessons designed by other colleagues or can create their own educational resources. The LIVRESQ platform allows the creation of more diverse types of materials (online lessons, textbooks, workbooks, atlases, magazines, newspapers, tests), than the Wand.education platform which allows the realization of a smaller number of materials types (online lessons, tests and homework assignments). On both platforms, the teacher can access editable content (projects, sections, resources, effects) already created and can add this content to personal projects. With a minimum of informatics technology knowledge, teachers can create complete lessons, assessments, animated and interactive games. In designing educational resources, teacher have the opportunity to enter images, audio and video files, text with several types of formats (.pdf, .word), and can add hyperlinks of any type of resource. The resources created can be private or public, uploaded to the library. The teacher can customize and send educational content to students using Groups.

The two platforms allow the creation of assessment sheets with pre-validated answers. Both platforms have functions for grading, assessment, and monitoring of pupils' schooling. Teachers can see what the students have learned and where they have gaps in knowledge, and can send them feedback, and follow the results obtained in tests throughout the school year. Student performance can be summarized using reports. One can create report sheets for each student, but also for the whole class. Homework sent to students is accompanied by information on their start date, as well as the deadline by which homework can be completed, and students' progress can be monitored. Both platforms are easy to use by the teacher, there are video tutorials that coordinate the teacher in designing educational resources. The LIVRESQ platform offers teachers the technical and administrative support service for the homologation of digital lessons by Ministerul Educației și Cercetării [Ministry of Education and Research] (MEC). The lessons approved by the MEC will be highlighted in the Livresq library.

3.4. Google Meet and Zoom

Google Meet is a video communications service developed by Google, a version of which has been offered for free since May 2020 (Google, 2020). Teachers with a Google account can create a video activity of up to 60 minutes for free for up to 100 participants. Until September 30, 2020, an activity organized on the free version can last up to 24 hours. To participate in the activity, the teacher sends the link or meeting ID to all participants, and this link is active during the activity. In the case of recurring teaching activities, the link remains active during the time interval in which the activity is repeated with the same group. Only persons approved by the owner can participate in the

activity. Guests can connect to online video conferencing from computers that have a modern web browser, without software installation, and from mobile devices, through Google Meet applications.

Zoom Meetings and Chat is provided by an American IT company Zoom Video Communications, Inc., from the USA, created in 2011 (Zoom Meetings and Chat, 2020). The application can be used on computer android and tablet but requires application download on the device. In the free version, one can initiate and conduct meetings of 40 minutes, which is an disadvantage, but one can have an unlimited number of meetings. The free version can host up to 100 participants. On the screen, 49 videos are accepted simultaneously, but when sharing the screen, the teacher can only see some of the participants in the video conference, which is a disadvantage. Paid packages (\$ 15 for each host) offer several benefits/ services.

Both video conferencing platforms offer several facilities for teaching: sharing teaching materials with pupils or students, sharing screen, using a virtual whiteboard, accessing documents, computer/ internet educational clips, sharing and editing word files. Screen sharing is easily done by any participant on Google meet, but on Zoom.us, only with the owner's approval. Both offer the possibility to record individual or group activities (a video presentation) and allow saving the video in the cloud and later it can be sent to participants.

Registration on Zoom.us has the advantage of having less mega. Both offer the possibility of written communication through chat, in parallel with video communication, which allows the formulation of questions during the presentation and hearing of the conference/ lecture/ presentation/ activity, thus increasing the degree of interactivity of the activity. Through the "File" button in the chat, documents can be uploaded so that students download them during the lesson. Hyperlinks can also be sent to various study materials, or to various applications. The teacher can manage the use of microphones (closing to reduce disturbing sounds for hearing or to increase the accuracy of the sound from the source), he or she can invite a particular participant to exhibit or share a material on the screen.

The Zoom platform offers the possibility to use an interactive whiteboard by choosing the option "Whiteboard Share" on which you can draw, write, etc. Connected students can also contribute to this virtual board. Unlike the Microsoft Teams and Moodle platforms, these video conferencing platforms are more friendly and are more similar with face to face communication because the faces of the participants can be seen on the screen, which explains the teachers' preference to use them for teaching activities. From the audience's perspective, they can decide to cut the sound and image on their own device, a situation in which the teacher is not sure of students' authentic participation in the activity.

4. Conclusions

Regarding these case studies, several conclusions are outlined. In Romania at university level, the teaching activities for part-time study programs and open distance learning programs take place formally, on specialized platforms that ensure learning management (Microsoft Teams and Moodle), in compliance with certain rules, but also by providing additional resources using other applications. In the pandemic context, the teaching activities within the study programs with frequency were carried out either on specialized platforms, but initiated and managed by each teacher, or on videoconferencing platforms and/ or by using other applications and tools.

At K-12 level, we notice the existence of private, informal educational platforms, which offer educational resources, facilities and tools for their creation and for the integral organization of online teaching activities. If at university level, there is a low degree of sharing of educational resources, visible in the use of platforms, at K-12 level, it is specific a greater willingness to share personal experience and a rapid transfer of information, solutions to problem-situations in teachers' communities organized informally, especially through Facebook social network. At K-12

level, the two platforms analyzed indicate teachers' growing interest in creating multimedia educational content.

At the end of the study, we emphasize that activities in the virtual environment, on educational platforms of various types, require medium and high-level digital skills for teachers and large resources for preparing the content to be delivered. We also note that the degree of difficulty in managing the online activity is higher, compared to the face-to-face activity because the teacher uses, in parallel, a series of tools to deliver content to pupils and students and has fewer ways to monitor and direct the pupils' and students' activity.

References

- Andrei, C. (2020): *Coronavirus. Metoda „magazinul” folosită de unii profesori în perioada predării online, 13 mai, Radio Europa Liberă România* [Coronavirus. The “Store” Method Used by Some Teachers during Online Teaching, 13th May *Radio Europa Liberă România*]. <https://romania.europalibera.org/a/coronavirus-metoda-magazinul-folosit%C4%83-de-unii-profesori-%C3%AEn-perioada-pred%C4%83rii-online-/30609298.html>, accessed 22 August 2020.
- Ascendia S.A. (2020): *LIVRESQ*, <https://livresq.com/ro/>, accessed 25 August 2020.
- Băban, A. (2002): *Metodologia cercetării calitative* [Methodology of Qualitative Research]. Presa Universitară Clujeană, Cluj-Napoca.
- Blackboard (2020): *Blackboard*, <https://www.blackboard.com/>, accessed 25 August 2020.
- Digitaledu.ro, digitaledu (2020): *Aplicații, instrumente și platforme educaționale* [Educational Apps, Tools and Platforms]. <https://digitaledu.ro/platforme-educationale/>, accessed 22 August 2020.
- Dobrițoiu, M., Corbu, C., Guță, A., Urdea, G. and Bogdanffy, L. (2019): *Instruire Asistată de Calculator și Platforme Educaționale On-Line* [Computer-assisted Training and Online Educational Platforms]. Editura Universitas, Petroșani.
- Dulamă, M.E., Ilovan, O.-R. and Roxana-Maria Buș (2016): Cultural Landscapes and Geography University Students' Learning on Facebook Discussion Groups. In M. Vlada et al. (eds.): *Proceedings of the 11th International Conference on Virtual Learning*. Editura Universității, București, 50-57.
- Edelhauser, E. and Lupu-Dima, L. (2020): Is Romania Prepared for eLearning during the COVID-19 Pandemic? *Sustainability* 12, 13, article number: 5438.
- ElearningRomania (2020): *Profesori din peste 4000 de instituții educaționale din România dezvoltă lecții interactive online pe LIVRESQ* [Professors from Over 4,000 Education Institutions from Romania Develop Online Interactive Lessons on LIVRESQ]. Available at <https://www.elearning.ro/profesori-din-peste-4000-de-institutii-educationale-din-romania-dezvolta-lectii-interactive-online-pe-livresq>, accessed 22 August 2020.
- Google (2020): *Google Meet*, <https://meet.google.com/>, accessed 25 August 2020.
- Holotescu, C. and Grossecck, G. (2014): Evaluare 2.0: abordări conceptuale [2.0 Assessment: Conceptual Approaches]. In D. Murgu (coord.), *Repere orientative în evaluare*. Editura de Vest, Timișoara. file:///C:/Users/TID2/Downloads/capitolHolotescuGrossecck_final.pdf, accessed 22 August 2020.
- Ilovan, O.-R. and Doroftei, I. (eds.) (2017): *Qualitative Research in Regional Geography. A Methodological Approach*. Presa Universitară Clujeană, Cluj-Napoca, DOI: http://doi.org/10.23740/QUAL_METHODS2017
- Magdaș, I. and Pop, M. (2015): Integrated Project for ICT Discipline. In M. Vlada et al. (eds.), *Proceedings of the 11th International Conference on Virtual Learning*, 164-168.
- Magdaș, I. and Răduț-Taciu, R. (2016): A Didactical Analysis of Math Online Games for Primary Education. In M. Vlada et al. (eds.), *Proceedings of the 11th International Conference on Virtual Learning*, 175-181.
- Manea, A.D. and Stan, C. (2016): On-line Communication. *Education, Reflection, Development, Fourth Edition. European Proceedings of Social and Behavioural Sciences* 18, 317-323.
- Manea, A.D. and Stan, C. (2018): Study Regarding the Use of Information and Communications Technology. *Education, Reflection, Development, Fifth Edition. European Proceedings of Social and Behavioural Sciences* 41, 271-277.
- Microsoft, Microsoft 365 (2020): *Microsoft Teams*, <https://www.microsoft.com/ro-ro/microsoft-365/microsoft-teams/free>, accessed 25 August 2020.
- Moodle (2020): *Moodle*, <https://moodle.org/>, accessed 25 August 2020.
- Nuere, S. and de Miguel, L. (2020): The Digital/Technological Connection with COVID-19: An Unprecedented Challenge in University Teaching. *Technology Knowledge and Learning*, early access: Jul. 2020.
- Peisachovich, E., Da Silva, C., Penhearow, N.J., Sombilon, E.V. and Koh, M. (2020): Implementing Virtual Simulated Person Methodology to Support the Shift to Online Learning: Technical Report. *Cureus* 12, 6, article number: e8864.
- Prokopenko, I. and Berezna, S. (2020): Higher Education Institutions in Ukraine during the Coronavirus, or COVID-19, Outbreak: New Challenges vs New Opportunities. *Revista românească pentru educație multidimensională* 12, 1, Suppl. 2, 130-135.
- Siveco (2020): *Wand Education*, <https://app.wand.education/login>, accessed 2 August 2020.
- Terenko, O. and Ogienko, O. (2020): How to Teach Pedagogy Courses Online at University in COVID-19 Pandemic: Search for Answers. *Revista românească pentru educație multidimensională* 12, 1, Suppl. 2, 173-179.

- Vlada, M. and Jugureanu, R. (2007): E-Learning Technologies - Achievements and Perspectives. In M. Vlada et al. (eds.), *Proceedings of the 2nd International Conference on Virtual Learning*. Editura Universității, București, 35-46.
- Vlada, M., Adăscăliței, A., Jugureanu, R. and Albeanu, G. (2010): CNIV and ICVL Projects-News Technologies in Education and Research. *Advanced Distributed Learning in Education and Training Transformation 1*, 301-312.
- Vlada, M., Jugureanu, R. and Albeanu, G. (2011): The Romanian Projects for e-Learning Technologies. In M. Vlada et al. (eds.), *Proceedings of the 6th International Conference on Virtual Learning*. Editura Universității, București, 71-77.
- Vlada, M., Jugureanu, R. and Istrate, O. (2009): E-Learning and Educational Software. Educational Projects and Experience of Implementation in Romania. In M. Vlada et al. (eds.), *Proceedings of the 4th International Conference on Virtual Learning*. Editura Universității, București, 25-39.
- Zoom Video Communication, Zoom Meetings and Chat Zoom (2020): Zoom, <https://zoom.us/>, accessed 25 August 2020.