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DIGITAL RESILIENCE IS THE NEW NORMAL OF HIGHER EDUCATION: STUDENT AND TEACHER PERCEPTIONS FROM ROMANIA

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Abstract

This paper aims to emphasize the fact that digital technologies in higher education are a necessity, both teachers and students must develop their ability to adapt and deal with informational technology challenges. Data collection was carried out through the administration of two online questionnaires, addressed both to students and teachers from the Faculty of Law and Economics, Spiru Haret University, in December 2021. The students shared their personal experience regarding distance learning in relation to the classical system (in classroom). Second questionnaire measures the frequency of teaching-learning methods, the ways of organizing the teaching materials existing in the eLearning platform, the media resources, evaluation methods used in teaching activities at distance and perceptions regarding some issues related with eLearning implementation. Based on the results, the authors highlighted that the online education process cannot be achieved through a simple translation of the didactic activity from the classroom to the virtual environment. The preparation of didactic materials for eLearning system requires more time and digital skills and special protection of intellectual property rights. The sanitary crisis accelerated the digitization of education,

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so that students are already aware of the advantages of E-Learning, but some disadvantages of this system can only be combated through blended learning.

Keywords: *Higher education, Videoconference, E-Learning, Teaching-learning methods, Information and Communications Technology*

JEL Classification: *I23*

Introduction

The new digital technologies can help Europe become more competitive, but a digital dilemma is emerging; they can create or expand access to markets for smaller firms and in lagging regions or they can create challenges for the European convergence machine if they concentrate economic activity in large firms and leading regions. [Hallward-Driemeier et al, 2020, p.2]

In the education field, technology has already become a constant in the case of teaching activities, as teachers are using computer-assisted training, specialized software and so on. Communication with students is done both, synchronous and asynchronous, in physical or virtual classrooms, on educational platforms (e.g., Blackboard, Edmodo, Schoology, Coursera, Edu. Moodle, etc.), e-mail and through social networks (Facebook, WhatsApp, Twitter). Also, the academic environment has become dependent on information technology, access to the latest specialized articles being facilitated by scientific databases, such as: Web of Science-Thomson Reuters, EBSCO; ProQuest, JSTOR etc., these being the means of promoting and certifying their own scientific contributions [Patache et al., 2022a].

Based on a study conducted by World bank Romania needs to embrace digital innovation. On the one hand, the authorities must support the development of basic digital skills for all Romanians because only 28% of Romanians aged 16-74 have basic digital skills like sending/receiving emails, connecting to social media, or participating in ecommerce and Romanian rural citizens currently have the second lowest level of basic digital skills in the EU. On the other hand, the firms' management must be encouraged to manage digital and managerial training for employees. [Akhalkatsi & Kapil, 2022]

Literature Review

In the last few years, digital technology in tertiary education is subject of many articles. [Santos et al, 2019; Rabbanee et al,2019; Tudor & Popescu, 2020; Gudimetla et al, 2021; Qureshi et al, 2021; Patache et al, 2022a; David et al, 2022 and so on]

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Resilience is the capacity of individuals, groups, or communities to respond and cope with any external or internal shock/crisis such as one caused by natural calamity or pandemic, by bouncing back or moving forward to adopt the disruptive change excreted by the shock [Roberts et al., 2015].

Digital resilience, a subset of resilience, represents the process of surviving major exogenous crises using digital means. [Bera & Kim, 2021, p.2]

Due to the increasing interest in resilience research, resilience has been contextualized at an individual level, family level, community level, national level, and cultural level. At individual level, "digital resilience is the capacity and dynamic cycle process of an individual to change their behavioral performance and psychological functioning through understanding the risk, knowing approaches, learning knowledge and skills, recovering from stress, and moving forward when facing various digital technology-related threats within the school education settings" [Sun et al, 2022, p.10]

Rabanee et al (2019) define digital resilience as an individual student's psychological capacity to remain functional by absorbing, recovering from, adapting to and learning from adversities stemming from the use of digital technology in the tertiary educational context.

The sanitary crisis accelerated in many countries the digitalization and in education system, too. Aristovnik et al. (2020) mentioned that the mental wellbeing of learners in higher education was most affected by the radical changes caused by the measures instituted to address COVID 19, and that this impact on their wellbeing negatively affected their academic performance. [Bozkurt, 2022, p.1]

Post-pandemic, the higher education institution must "regenerate itself and be born again" like the Phoenix and to embrace the new normal first: resilience, adaptability, and sustainability, second: psychological pressures, social uncertainty, and mental well-being of learners, and third aspect the rise of online distance education and blended-hybrid modes. [Bozkurt, 2022, p.12]

There is no doubt that without proper information and communication technology equipment, internet/mobile network connectivity, instructional resources, and teacher training, students cannot participate in distant education. But in our country also, students from resource-poor locations, isolated rural areas, and low-income households are more likely to fall behind. [Haleem et al, 2022; Eri et al, 2021; David et al, 2022; Patache et al, 2022b; Tudor & Popescu, 2020 and others]

In Australian system, the problems concerns students as some key disadvantages of using technology have been found, such as: feelings of

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disconnection; a tendency toward procrastination; and technology-use anxiety. These not only affect students' learning performance adversely but also raise a fundamental question regarding tertiary-level student resilience when using digital technology in the education system. [Rabbanee et al, 2019]

In study conducted in a Portuguese university (in 2018) it has shown that students pragmatically choose the most appropriate device to communicate with their teachers, and it is a low expectation regarding the use of social networks and videoconferencing and voice systems, although these systems are widely used daily for other purposes. [Santos et al, 2019, p.129]

By teachers' point of view, other studies showed that there are barriers to the use of digital technologies in universities, many university teachers use digital technologies infrequently in their teaching practice and, on the few occasions that they are used, teachers tend to turn to the same type: technologies that can be used more for supporting their lecture sessions, and less so the development of student-centered activities. [Mercader & Gairin, 2020; Wang et al, 2020; etc.]

Based on the results of a study conducted in Spain, scholars strongly recommended implementing continuous training in diverse online teaching strategies among educational professionals for the purpose of avoiding work overload and overwhelming conditions in any situation, as for developing digital communication skills to improve contact with students. [Aguirre, 2022, p.7]

Teaching-learning methods on distance learning

The teaching-learning process includes three major categories of methods usable in the educational process, respectively:

a. ***Expository method*** - is a way of teaching in which the teacher gives information to the students, without interacting with them much, except - sometimes – when asking questions by calling on students for answers. It is a very common method of teaching and is used especially when what needs to be learned are new, difficult concepts that are difficult for students to grasp. It is used to facilitate the process of knowledge accumulation (conceptual and factual), to guide students in the learning process, to motivate them to determine students' attitudinal change. The major problem is that students' listening ability in the learning process, so "after about 10-15 minutes their attention begins to drift, first for brief moments and then for longer intervals, and by the end of the lecture they are receiving very little and retaining less" [Ruutmann & Hant, 2011, p.38].

The expository includes didactic activities such as: presentation, exemplification, case studies, and demonstrations.

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b. ***Practical problem-solving methods*** – concern the involvement of learners in practical activities that can vary from simple exercises to more complex methods such as simulations or research activities. The use of these methods involves the presence of a teacher to provide guidance and facilitate student reflection.

The applications include didactic activities such as: the demonstrative-practical method, guiding students in carrying out work tasks, case studies, role-playing games, simulations, guided research, project development etc.

c. ***Collaborative methods*** - Collaborative learning is an instructional learning method that involves grouping students to work together toward a common academic goal. The method is based on the theory that knowledge is a social construct, and educational experiences that involve social interaction and exchange that are contextually relevant and engaging being learner-centered, lead to deeper learning.

Collaborative methods include didactic methods such as: online discussions guided by the teaching staff, projects developed in teams, collegial tutoring.

In the distance learning system, we appreciate that the following methods are more appropriate (see Annex 1):

Regarding expository the didactic methods are:

- ✓ *Word and Power Point presentations* – present the content to be learned, students can access them from a dedicated virtual space or receive them by e-mail. Accessing them does not imply collaboration with the teaching staff. Teachers can control the access to the course content in Blackboard by using Adaptive release options.
- ✓ *Audio-video recorded presentations* made by the teaching staff and uploaded in a virtual space, from which the students can access. Access does not imply collaboration with the teaching staff.
- ✓ *Virtual courses* – The teaching staff presents the course to a group of learners who are connected to an online platform simultaneously. Students can interact with faculty and ask questions and receive immediate feedback. Access to the Internet and the use of a platform that allows the organization of virtual classes is necessary. Also, it may also be necessary to use some useful tools in conducting synchronous teaching activities: whiteboard, chat applications, etc.

Recommended practical problem-solving methods are:

- ✓ *Demonstration t*hat represents a method used to teach a work procedure - using direct instruction. In the application of this didactic method in the e-learning system, the way to apply the procedure is first demonstrated by the

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teacher, then the students are asked to practice the procedure by using a specialized software or not or in audio-video presentations and/ or virtual classroom.

- ✓ *Case studies* are used to develop cognitive skills in a specific area. In this method, students apply knowledge and principles to a concrete situation. Usually, this method is built around a scenario, for example, a difficult situation where students must make decisions by choosing between different options. They are given an overview of the different assessment methods, criteria, and information about the specific program to be assessed, and the teacher then comments on the learners' choices. To carry out online case studies, methods such as virtual courses, simulations using specialized software, individual tutoring (teacher - student), activities carried out by student teams can be used.
- ✓ *Guided research* - students are tasked by the teaching staff to carry out research on a certain topic. The teaching staff can guide the learner in gathering and organizing information. To carry out online guided research activities, methods such as: discussion forums, e-mails, chats and audio or video conferences for communication between the student and the teaching staff, jointly completed documents for the presentation of the results can be used.
- ✓ *Developing projects* – students are given the task, by the teaching staff, of developing a project by applying the principles and concepts learned in a specific context. To carry out project development activities online, methods such as discussion forums, e-mails, chats and audio or video conferences can be used for communication between the student and the teaching staff, jointly completed documents for the presentation of the results.

We mention the following *collaborative methods at distance*:

- ✓ *Team-based teaching activities* – in this case, students work together to carry out different types of activities, such as assessment, analysis, or project development. The essence of the method lies in the fact that students must collaborate, listen to each other, and confront their opinions to develop their interpersonal skills and problem-solving skills. To carry out team activities online, methods such as: discussion forums, e-mails, chats and audio or video conferences can be used for communication between the student and the teaching staff, jointly completed documents for the presentation of the results.

- ✓ *Peer tutoring* – is a method in which learners monitor and support each other. By practicing this method, students could learn from each other's work and practice mentoring methods. To carry out such activities online, methods such as: discussion forums, e-mails, chats and audio or video conferences can be used for communication between the student and the teaching staff, jointly completed documents for the presentation of the results.

According to Ruutmann & Hant direct instruction has four key components: clear determination and articulation of goals; teacher-directed instruction; careful monitoring of students' outcomes and consistent use of effective classroom organization and management methods. [Ruutmann & Hant, 2011, p.38]

Indirect instruction is an approach to teaching and learning in which concepts, patterns and abstractions are taught in the context of strategies that emphasize concept learning, inquiry learning and problem-centered learning. [Ruutmann & Hant, 2011, p.40]

USH students and teachers' perception regarding distance learning

Spiru Haret University (USH) management has been visionary and implemented specific systems for distance learning. Since 2006, USH has been using one of the most performing educational platforms in the world, Blackboard, with over 100 million global users.

With a friendly and easy to use interface, Blackboard allows the didactic activity based on the login with the personal account.

Students have access to courses and support materials, both in text format and in the form of audio-video files with attractive graphics, as well as information on the schedule, scheduling exams or grades obtained.

At the evaluation level, the Blackboard platform offers the possibility to test and computerize the activity of each student (monitoring each student and information accessed).

Thus, students must solve applications, create essays, or go through evaluation grids throughout the semester and there is also the possibility to take the final exam with the help of the platform.

During the COVID_19 pandemic, teaching activities took place mostly online in all study programs. Activities were carried out both synchronously and asynchronously. For video conferencing was available to everyone Google Meet service.

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To identify ***students' perception*** regarding the quality of the distance education system during the pandemic, at the end of the academic year 2021-2022, we applied an online ***questionnaire***.

We registered 155 responses from students of Faculty Law and Economics Constanta.

We mention the fact that the respondents are following our student profile that is not a typical one; 83% are between 25-44 years old and almost 10% are more than 45 years, many of them have a part-time or full-time job and families with children. So, the main problem of these students is time management.

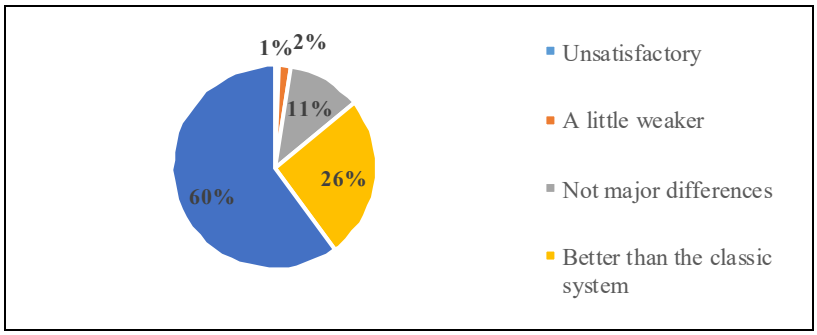

Figure no.1. Students' general perception regarding distance learning vs classical system

Source: Authors

Based on their learning needs, students shared their personal experience regarding distance learning in relation to the classical system (in classroom). More than 80% of them appreciated as being more appropriate for their needs the system of distance learning. (Figure 1)

All students have access to at least one device (laptop, desktop, tablet) exclusive (87.1%) or shared (12.9%). They mentioned laptops as the most commonly device used (52.9%), smartphone (36.8%) and desktop (9%).

The online resources provided by the university were appreciated as invaluable by 72.3 of respondents, very useful of 24.5 and useful for the rest of them.

Regarding the possible strengths and weaknesses of the implementation of eLearning, students appreciated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree), some of previous identified issues as follows:

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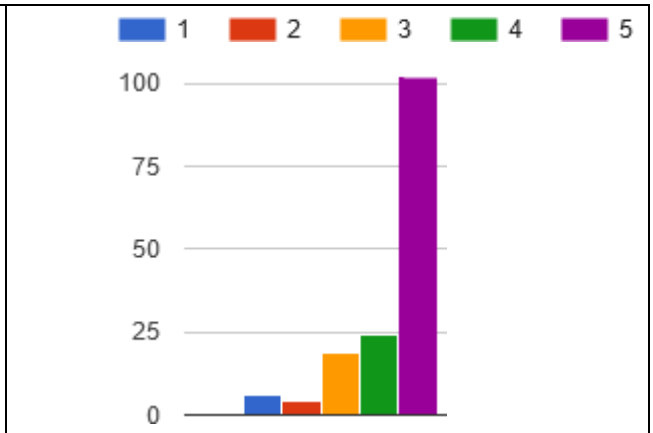
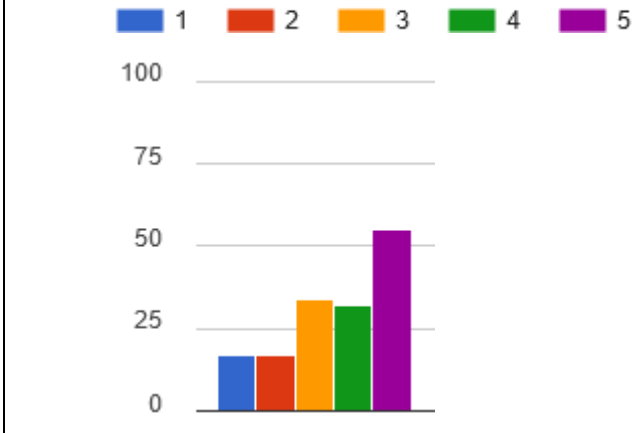
The comfort's degree I feel in online educational communication is higher than in classic educational communication	
I have a greater opportunity to make friends with colleagues in the context of online compared to classic educational communication	

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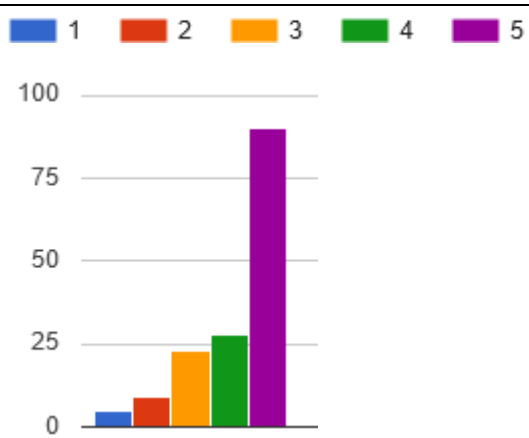
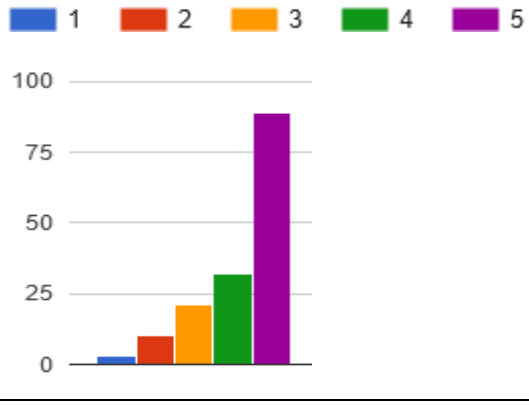
I am more motivated to participate in the courses organized online compared to the courses organized in the classic system	
Online courses help me improve my digital skills more than classic system courses	

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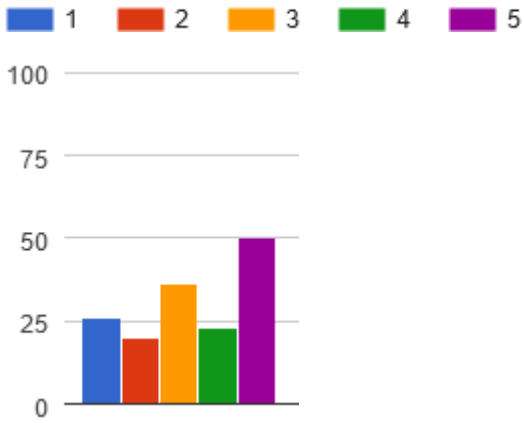
In the context of online courses, I have the feeling that the relationship with the teaching staff is impersonal	

Many students feel much more comfortable using the online communication environment than using the classic educational communication, the possibility of making friends is much greater than in the classic system, they are more motivated to participate in the courses organized online compared to the courses organized in classic system, online courses help them improve their digital skills more than classic system courses, and the relationship with the teaching staff is impersonal.

Finally, the students were asked if they had to opt for doing the didactic activities online, respectively in the classic system, what would they choose, and 65.2% of them would choose the online system, 20.6% of them rather the online development of didactic activities, blended learning was the option for 11% and only 3.2% have chosen the classical system.

From 151 subjects according to the education plans of the Management and Law study programs, following an analysis based on the competencies identified as priority by the business environment, were selected 43 courses taught by 18 teachers (80% of the staff) for evaluation of online teaching-learning methods.

Based on the results of ***the second questionnaire*** applied, most of ***the teachers*** used video recordings of courses and/or other teaching materials useful in the educational process, frequently (for 29 of the courses) or occasionally (10 courses).

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Only for 2 courses the response was" No, but I will consider using this method" and one teacher appreciated that he does not consider this method useful.

Most of the respondents held synchronous distance courses and 2 teachers appreciated that the method is not useful.

Email correspondence with students to provide support/feedback regarding the course is a frequent method of communication for 27 of the evaluated courses and occasionally used at 15 of them. The results are similar in the case of submitting assignments that students solve online.

Online assessment and automated grade calculation throughout the semester, in our faculty is facilitated by Blackboard platform, so 95% of the courses are using this system, except for master's courses.

Using software methods to prevent plagiarism and copying from one student to another is frequently applied in the case of 39 courses and just 1 teacher mentioned that he has not used the method but will do so in the future.

Interactive activities carried out online with students are a frequently used and unanimously accepted way of working.

Concerning the ways of organizing existing teaching materials in the Blackboard platform all of respondents organize the course by modules, 98% displays bibliographic materials, other than the course support/seminar notebook and 75% shares external links to bibliographic materials.

Based on a scale from 1-4 (4- very important) teachers appreciated the most useful media resources, that supported teacher's verbal presentation, in the online teaching-learning process such as: text in Power Point Presentation (PPT) format, graphical presentation, audio-video content and text in word/pdf format, as in the figure below.

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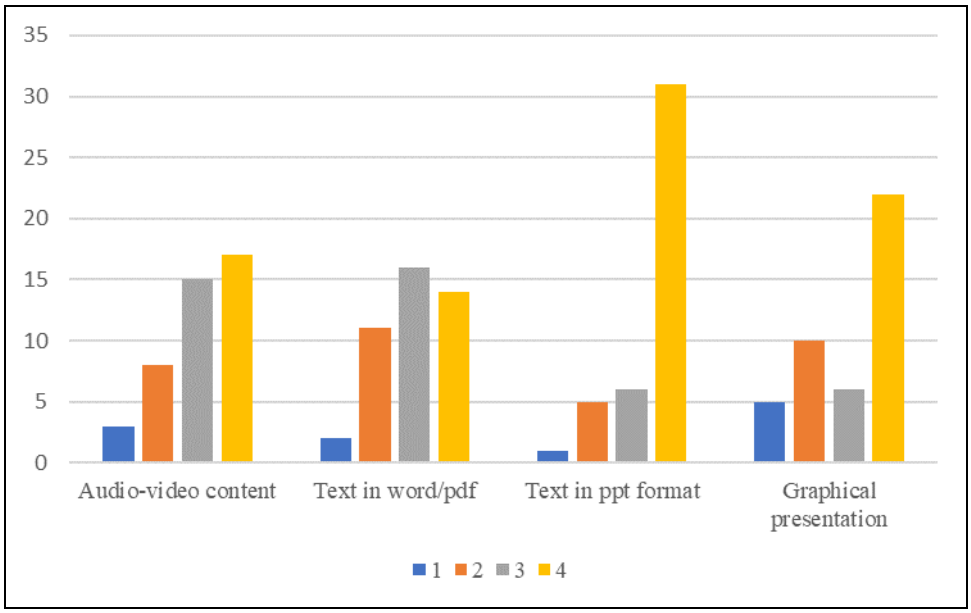

Figure no.2. Teachers' perception regarding the most useful media resources for courses

Source: Authors

During the pandemic when courses were held remotely, the evaluation process was composed of 2 assessments and 1 final exam. Teachers mentioned that 81.4 % used multiple choice grille tests, 46.5% evaluation based on students' written elaboration of some required subjects and 46.5% evaluation based on oral presentation of some subjects/report/case study etc.

The teaching staff of our faculty appreciated the way was carried out online the teaching-learning process, on a Likert scale from 1 (strongly disagree) to 5 (strongly agree), as follows:

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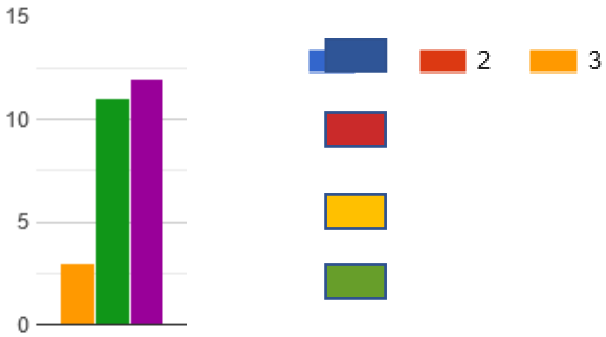
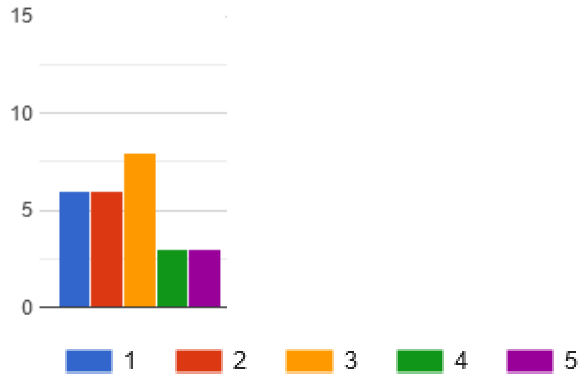
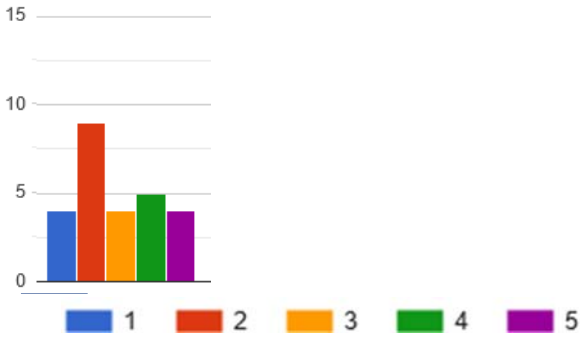
Online teaching activities contribute to improving the reputation of our university	
Online teaching activities may affect intellectual property rights	
The online preparation and running of the didactic activities do not involve a greater time consumption for the preparation of the didactic materials, compared to the running of the didactic activities in the classic system	

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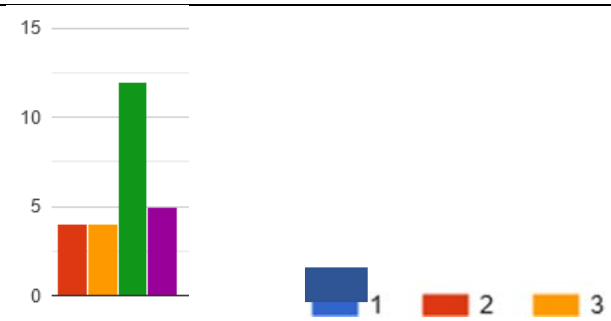
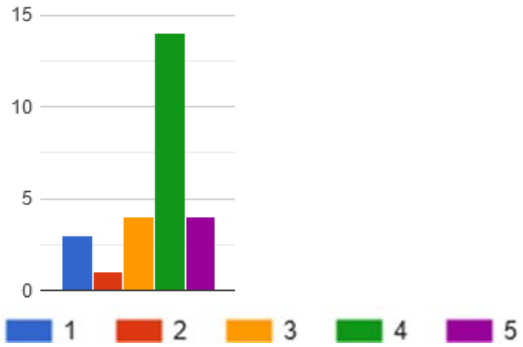
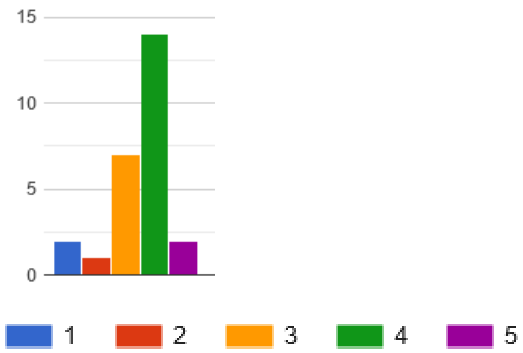
The on-line development of didactic activities allows greater flexibility than the development of didactic activities in the classic system	
On-line teaching activities allow access to a wider range of teaching tools than traditional teaching activities	
The online development of didactic activities allows greater customization of the educational process compared to the development of didactic activities in the classic system	

The last question asked was of the suggestions for improving the online performance of didactic activities and the responses were:

- ✓ Diversification of teaching-learning methods and tools.

- ✓ Increasing interactivity and diversifying evaluation methods.
- ✓ More materials in video format.
- ✓ Topics for debate, in larger numbers.
- ✓ Permanent adaptation to the problems that arise at the level of public institutions, with the aim of preparing future public officials to contribute successfully to serving the general interest of society.
- ✓ Permanent update, as many practical applications (case studies and simulations) as possible.
- ✓ The use of several teaching methods and tools to increase interactivity. For example, guests who will talk to the students about the development of economic activity during the communist period or visits to museums/institutions (virtual tours also), etc.
- ✓ The use of only rudimentary education methods through online platforms will reduce the efficiency of students making them unable to deal with problems that require various skills that are generally acquired through conventional and methodical education. To replace the inability to follow the model of the conventional and systematic approach to learning, online courses must lead to the motivation and involvement of students through methods such as: creative tools, materials in the form of modern presentations. The course materials must be conducted with the support of various professionals, subject matter experts, animators, video editors, designers and website administrators, and others.

Based on the results of the two questionnaires, the authors highlighted that the online education process cannot be achieved through a simple translation of the didactic activity from the classroom to the virtual environment. The preparation of didactic materials for eLearning system requires more time and digital skills and the protection of intellectual property rights needs more attention. A course to be attractive must capture the student's attention and inspire his curiosity. [Patache et al, 2022]

Both teachers and students need digital skills. In the teacher's case, the materials support for course must be elaborated together with various professionals to be appropriate for digital environment.

Conclusions

Higher education institutions are more and more competitive even if we talk about the rivalry of the public system with the private one or between national and international institutions.

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Future teaching is wholly based on digital mediums and devices; avoiding digitalization is not possible at this point. Artificial Intelligence is supported by the Industrial Revolution 4.0 to transform volatile digital strategies and challenge the whole world. Effectual use of digital learning settings in academic putting involves an advantage in answering many critical techno-social concerns jointly. [Qureshi et al, 2021, p.41]

Even though teachers are less attracted to adapt and learn new educational methods; simultaneously, students are positive toward learning new technologies [Qureshi et al, 2021, p.43], so, in a student-centered university, the client has the final decision.

Today, the old method of teaching and learning will lead to the failure of educational institutions, students have a much wider range of choice and like any current consumer are better informed and more demanding.

To adapt to technological pedagogical content knowledge (TPACK) it is necessary that teachers participate in professional development training. Furthermore, the very nature of education generally results in a substantial lag between the time at which the initial cost of reform is incurred and that at which intended benefits materialize (or not) [Schleicher, 2018].

Educational innovation can be crucial to improve quality in teaching and learning and is understood as the permanent training of teachers to adapt and respond to the current needs of their students and society. [Aguirre et al, 2022, p.1]

Without training, teachers are unlikely to understand exactly how these feedback mechanisms work and therefore will not optimize their effectiveness [Johnson et al, 2016].

In hybrid or exclusively online academic environment, new platforms as well as new pedagogies are necessary for a better response to the educational needs of today's students. [Cramarenco & Burcă-Voicu, 2021, p.11]

Fun education, based on action and interaction, has positive effects, and shows us a higher potential to explore and apply.

After the pandemic, while students and teachers became aware of the advantages of the eLearning system, the return to traditional teaching methods is no longer possible.

Blended learning with gamification throughout the semester and more interactivity in synchronous activities is the key to success in attracting and motivating students.

It is about the fact that the digitization of education, a phenomenon that tends to become the norm and not the exception in higher education, needs a solid scientific

foundation that addresses to the complexity of these activities, their advantages, and limits, as well as the coordinates that define its quality.

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Annex 1

METHODES	DIDACTIC ACTIVI-TIES	RECOMMEN-DATION REGARDING USE	DISTANCE LEARNING TOOLS	ADVANTAGES	DISADVAN-TAGES
EXPOSI-TORY	Presenta tion, exemplifica tion, case studies, demonstra tions.	It facilitates the acquisition of knowledge (mainly conceptual and factual), orienting students in the learning process, motivating students, changing attitudes.	Word/PDF/ PPT Text	They can be developed quickly	They do not support interactivity, they support teaching – passive learning.
			Interactive presentations that combine images, text, animations, questions to those who follow the course	High degree of flexibility, allow the use of various training techniques	Low to medium interactivity, they support teaching – passive learning. To reduce the risks, a good knowledge of how to use e-learning tools is necessary.
			Video recorded courses	They can be developed quickly	They do not support interactivity.
			Courses held in the virtual classroom	They allow interaction between teaching staff and students.	The teaching staff must have the competence to teach online, they must use appropriate support teaching materials, a good internet connectivity is needed.
PRACTICAL PROBLEM-SOLVING	Demonstra tions	Develops skills related to the application of procedures	Simulations, Virtual Classroom	They allow students to practice certain work procedures.	To be performed at the highest level, it is necessary to use specialized software.

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METHODES	DIDACTIC ACTIVI-TIES	RECOMMEN-DATION REGARDING USE	DISTANCE LEARNING TOOLS	ADVANTAGES	DISADVAN-TAGES
	Guiding students in carrying out work tasks	They provide assistance and advice from the teaching staff, when the student prepares a work assignment.	Presentations of documents, manuals, work procedures.	They promote the transfer of theoretical notions into practice.	To be performed at the highest level, it is necessary to use specialized software.
	Case studies	They develop the cognitive skills specific to various professions.	Interactive courses held in the e-learning system; Simulations; Individual tutoring activities; teamwork carried out online.	High level of interactivity, possibility to provide personalized feed-back, social dimension.	They require a lot of time for the development of didactic materials, the permanent presence of the teaching staff is necessary.
	Role-playing games	They develop interpersonal skills, stimulates attitudinal change.	Interactive courses held in the e-learning system; Simulations; Individual tutoring activities; teamwork carried out online.	High level of interactivity, possibility to provide personalized feed-back, social dimension.	They require a lot of time for the development of didactic materials, the permanent presence of the teaching staff is necessary.
	Guided research and project develop ment	They develop active knowledge.	Forum discussions, e-mail, chat, online conferencing, document sharing.	They allow obtaining a high level of active knowledge.	They require the frequent involvement of the teaching staff for advice and feed-back.

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METHODES	DIDACTIC ACTIVI-TIES	RECOMMEN-DATION REGARDING USE	DISTANCE LEARNING TOOLS	ADVANTAGES	DISADVAN-TAGES
COLLABORATIVE	Online guided discussions	They stimulate critical thinking and analysis, develop interpersonal skills, stimulate attitudinal change	Forum discussions, e-mail, chat, online conferencing, document sharing.	They encourage reflection, socialization, and knowledge sharing	They are less effective than project development in terms of achieving learning objectives.
	Peer tutoring	They stimulate critical thinking and analysis, develop interpersonal skills, and stimulate attitudinal change.	Forum discussions, e-mail, chat, online conferencing, document sharing.	They support the development of projects.	The presence of a teaching staff may also be necessary.

Source: Parvu I. (coord.), *Procedure for carrying out teaching-learning methods through the distance educational communication system,* (2021), Project: Innovative solutions for the practical training of students, ID 130332, co-financed by the European Social Fund through Human Capital Operational Program 2014 – 2020