

THE EFFICIENCY AND EFFECTIVENESS OF THE ONLINE EDUCATIONAL PROCESS IN HIGHER EDUCATION

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Abstract: Higher education, with its internal structures and processes, is in a process of conceptual and organizational transformation, a transformation imposed by the need to adapt academic education to the needs of a dynamic, unpredictable society. The period March 2020 – June 2021 was marked by numerous uncertainties and difficulties related, mainly, to the need to adapt teachers and students to the new conditions and requirements of the educational process. This article presents a research whose purpose is to identify whether the teaching-evaluation method exclusively online, or hybrid version can be considered factors that have generated dissatisfaction among students or, have had a beneficial effect on students in terms of effectiveness and efficiency of the educational process. The research was based on a quantitative methodology by applying a questionnaire addressed to undergraduate and master's students.

Keywords: higher education, online educational process, efficient, effective, questionnaire

1 INTRODUCTION

The teaching-educational process represents the ensemble of teaching-learning-assessment activities carried out in an institutionalized educational space, with a determined didactic technology and with certain anticipated and realized results (Bontaş, 2007). The three sides of the educational process must be approached in interdependence to determine its performance.

Teaching refers to the transfer by the teacher in an organized, scheduled way of the theoretical and practical knowledge that underlies the learning.

Learning refers to the acquisition and assimilation of theoretical and practical

knowledge by the student based on teaching and individual study.

The assessment is concretized on activities of appreciation, measurement and control of the theoretical and practical knowledge through which the objectives of education are related to the obtained results (Bontaş, 2007), ("Metodologia de evaluare externă", 2017)

The terms efficiency and effectiveness in DEX are explained identically: "producing effect (expected)".

According to the project management literature the term "effective" means doing the right things, and "efficient" means doing the right things. If we put together the two terms, efficiency + effectiveness = excellence (performance). That is, doing the right things

right = performance. According to (Popescu & Limbășan, 2013, p. 40) the concept of performance is used with several meanings: exceptional result, special achievement in a certain field, efficiency or results of the activities carried out in connection with the aims pursued.

The interest for obtaining performance in the educational process has increased recently (Costea, Ivașcu, Ancuța, Bălan & Iliescu, 2018) (Gover, Loukkola & Peterbauer, 2019) being part of the broad context of quality assurance in higher education. The performances of the educational process depend on the dynamic interaction between the three sides mentioned above, in particular, on the interaction between cognitive and behavioral learning (Bontaș, 2007) educational. In this sense, the correspondence between the learning outcomes and the university qualification is followed ("Metodologia de evaluare externă", 2017) (Limbășan, 2020).

That is why the concern for the analysis and continuous improvement of the teaching-learning-assessment activities is justified.

In the teaching process the teacher and the student have complementary roles. The relationship between them is established and developed in both directions, both being able to be transmitters and receivers of information. The teacher has the obligation to transmit the theoretical and practical knowledge in a planned, organized and customized way so that it can be received correctly by the student. The student receives this knowledge, but can also have the role of transmitter vis-à-vis the way in which he received the information received from the teacher. Thus, the feedback is made - the control of the educational process, the premise for ensuring its efficiency and effectiveness.

Following the feedback received, the teacher will be able to assess whether he has done the right things properly, will be able to make changes - if necessary to achieve excellence (performance).

2 THE PURPOSE OF WORK AND THE METHODOLOGY

In higher education, the period March 2020 - June 2021 was marked by numerous uncertainties and difficulties related, mainly, to the need to adapt the entire academic community to new conditions and requirements for the educational process imposed by the unpleasant situation that society went through. Teachers were challenged to quickly change their teaching-assessment methods to the requirements of the online system. Students were challenged to discipline their will and use time effectively to actively participate in classes and learn.

In this context, the aim of the paper is to identify whether the online or hybrid educational process is efficient and effective. Also, the research aimed to identify whether teaching - assessment methods - online or hybrid (online courses, laboratories, seminars, projects- face-to-face) can be considered factors that generate student dissatisfaction, or on the contrary, have had a beneficial effect on from the point of view of the efficiency and effectiveness of the educational process. Indirectly, other aspects were identified related to the students' wishes / needs regarding the teaching-assessment methods and whether this way of organizing the didactic activities can amplify the academic dropout phenomenon.

The research was based on a quantitative methodology by applying a questionnaire that highlights positive and negative aspects of the two methods of teaching-learning-assessment. The questionnaire was made using Google form and distributed on the Facebook page of the university. The target group was composed of undergraduate students and master students of Transilvania University of Brasov, from engineering. The sample of the questionnaire consisted of 112 valid answers. The questionnaire contains a number of 23 questions formulated in a direct way so that the

message is easy to understand. Respondents were able to choose one or more proposed answer options. The questions reveal mental phenomena, related to opinions, attitudes, preferences of the respondents in connection with various aspects of the teaching-learning-assessment process (Lefter, 2006).

3 RESULTS AND DISCUSSIONS

The questionnaire was conducted in order to find out if the online / hybrid teaching-learning-assessment method generates dissatisfaction or, on the contrary, had a beneficial effect in terms of the conduct of the teaching process. Following this study, the main beneficiaries would be students because through the suggested suggestions for improvement, teachers can modify or adapt their teaching techniques and strategies to better meet their needs. The study was conducted between July and August 2021. The following are the results obtained after processing the answers.

From the point of view of the preference of the teaching method (see Figure 1), most of the respondents (47.8%) prefer the hybrid system, they want to come to school for the application activities such as seminar, laboratory, project, but prefer the class hours to be online.

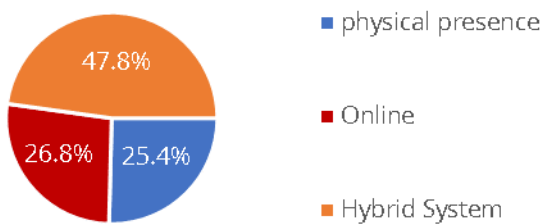


Figure 1. Preferred teaching method

It is observed (see Figure 2) that the majority of respondents (93%) were present on the university's e learning platform for online courses and application activities.

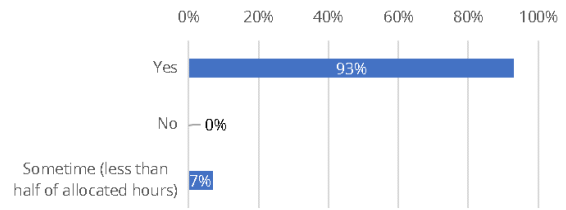


Figure 2. Students in online classes

From the point of view of the way of transmitting the information during the course (see Figure 3), in the version of online classes, 32.4% of the respondents appreciated this mode of transmission as advantageous.

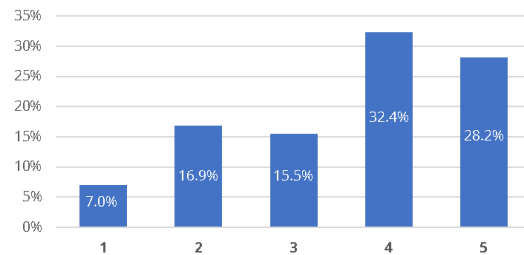


Figure 3. How to transmit information to the online course

The respondents appreciated positively (28.6%) the way of transmitting the information for the application activities, in the online version (see Figure 4). The respondents appreciated the fact that the study materials were easy to find on the elearning platform of the university, grouped by disciplines, in time, the information was structured and presented in an attractive form and for everyone to understand.

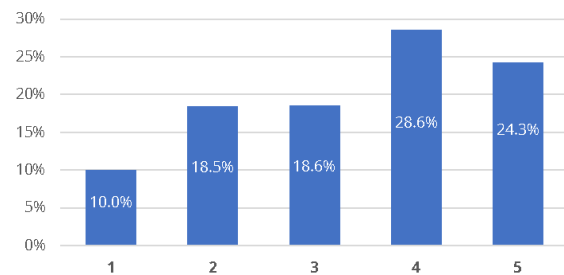


Figure 4. How to transmit information to online application activities

From the point of view of the teacher-student interaction, during the online classes, a significant percentage of students (56.3%) answered that the teacher explains and trains the students in the teaching-learning process, and the students actively participate (see Figure 5).

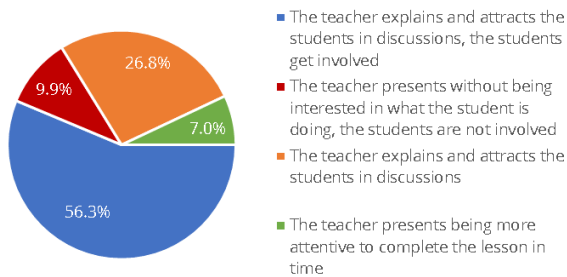


Figure 5. Teacher-student interaction in online classes

Students were asked about their preferred method of assessment on exams. 55.7% of the respondents prefer online evaluation and only 44.3% prefer classic evaluation (see Figure 6). The answers are correlated with the students' preference to be evaluated with grid tests with only one correct answer option and time limit (53.6% of respondents), while only 25% of respondents prefer the classic option (see Figure 7).

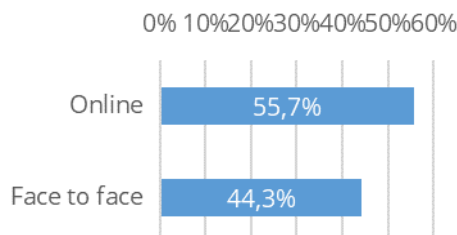


Figure 6. Preferred assessment method

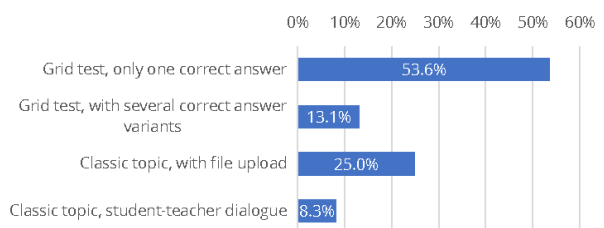


Figure 7. The preferred assessment method on the e learning platform

According to the study, even if the exam was conducted with the physical presence, most of the surveyed subjects prefer the evaluation method with grid tests with only one correct answer (61.6%), 25.4% prefer classical subjects, in writing (see Figure 8).

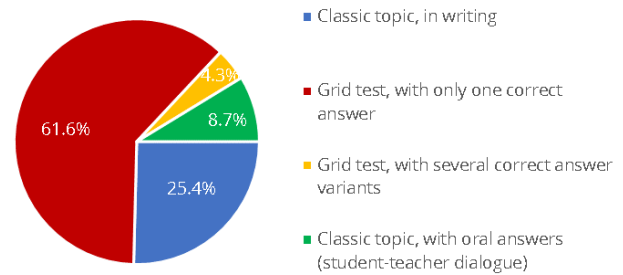


Figure 8. The preferred assessment method in face-to-face case

The study reveals that students consider that the effort to learn online 50% of respondents (see Figure 9) or hybrid, 64.3% –(see Figure 10) is as great as in the case of classes with physical presence.

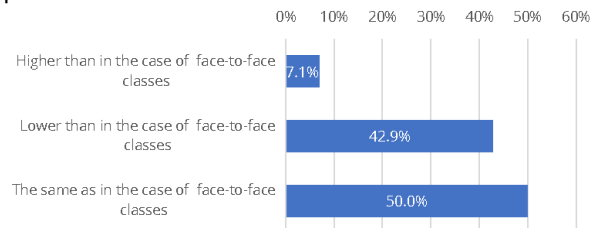


Figure 9. The learning effort in the online

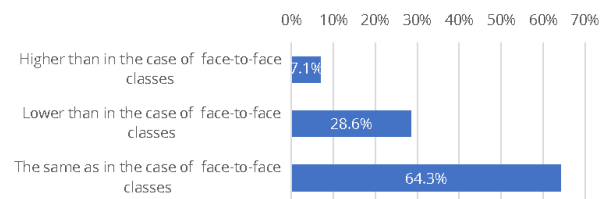


Figure 10. The learning effort in the hybrid system

When asked how much time is allocated to the individual study after the completion of online or hybrid classes, 50% of respondents allocate between 1 and 3 hours, while 35.7% of respondents, less than an hour (see Figure 11).

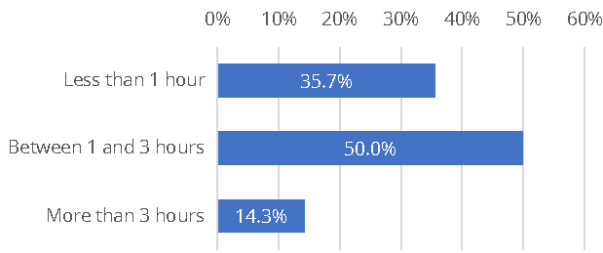


Figure 11. Time for individual study

The study reveals that half of the respondents consider that they are more creative in the case of conducting classes online than in the case of conducting classes with physical presence (see Figure 12).

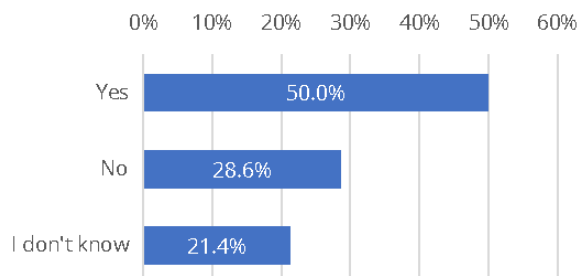


Figure 12. Student creativity

From the point of view of the general level in the acquisition of competencies (see Figure 13), a percentage of 35.2% of those surveyed considered that the impact was strong, effective. The evaluation was proposed on a scale of 1 to 5 (1 - very weak, inefficient, 2- weak, 3 - medium, 4- strong, 5 - very strong, efficient).

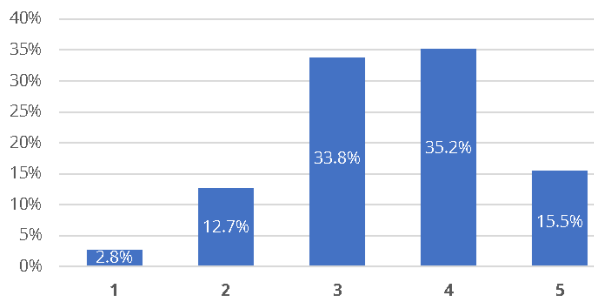


Figure 13. The impact of online classes in the acquisition the competences

Regarding the avoidance of a hierarchy based on the principle of meritocracy (see Figure 14) - knowing that it is quite difficult for teachers to master the phenomenon of copying in exams, in the case of their online conduct - a percentage of 34.3% of participants remain on a neutral position (1 - very weak, inefficient, 2- weak, 3 - medium, 4- strong, 5 - very strong, efficient).

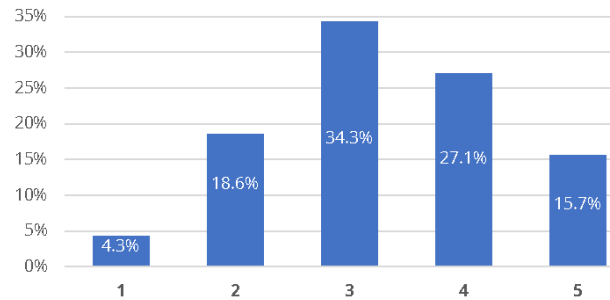


Figure 14. Avoiding hierarchy based on the principle of meritocracy

From the point of view of the impact of the assessment at the online exams, a percentage of 33.3% of the respondents considered that the impact was medium or strong (see Figure 15).

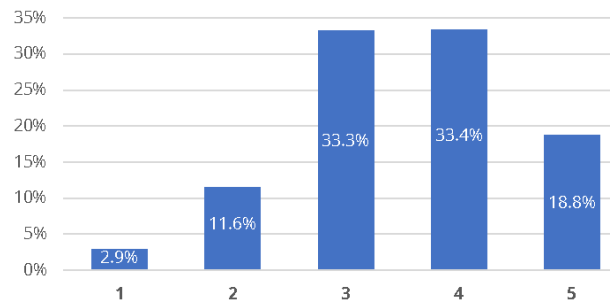


Figure 15. The impact of the assessment of the online exams

Students consider that the impact of online classes has a small (26.1% of respondents) or medium (29% of respondents) impact on academic dropout (see Figure 16)

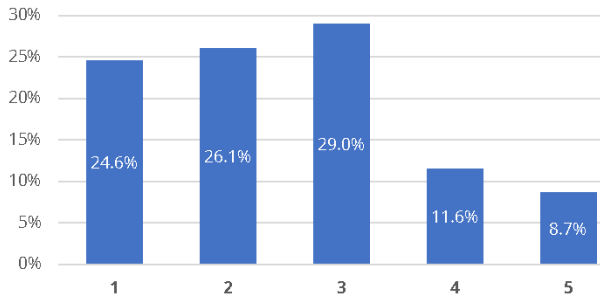


Figure 16. The impact of online classes on academic dropout

From the point of view of the risk of dropping out of university, the majority of respondents (76.1%) claim that they were not tempted to drop out of studies due to their online completion (see Figure 17), so the risk of dropping out is low (62% among respondents) (see Figure 18).

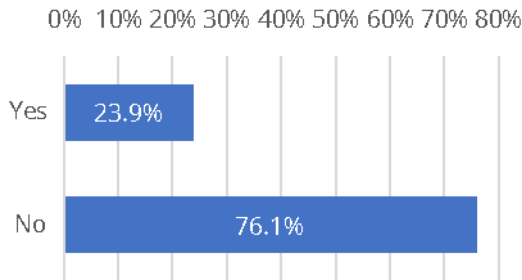


Figure 17. The risk of academic dropout in online

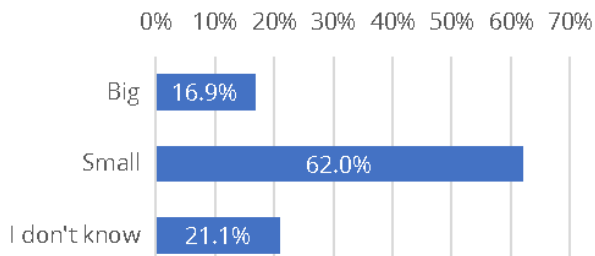


Figure 18. The risk of academic dropout

From the point of view of interest and professional development, a percentage of 56.9% of the respondents consider that the field

of study corresponds and only 4.3% expressed their total disagreement (see Figure 19).

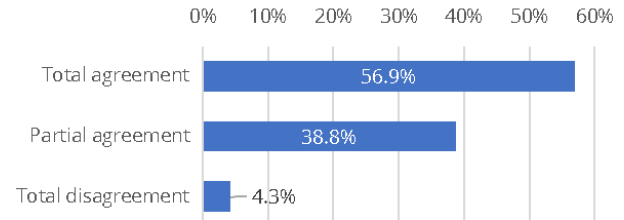


Figure 19. Connection between the field of study and professional development

This agreement is partially reflected, 70.8% of the respondents from the point of view of correlating the content of the courses in the curriculum with the personal expectations (see Figure 20).

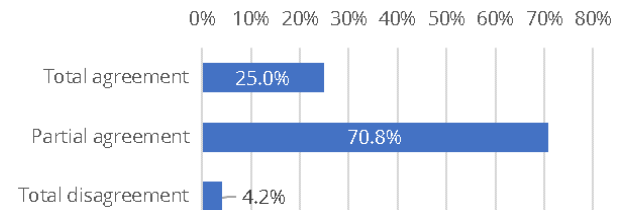


Figure 20. The connection between the course content and the students' expectations

The surveyed subjects are students and master students at faculties with technical profile within the Transylvania University and out of the total of 112 respondents participating in the study, 67.6% are also 32.4% men (see Figure 21).

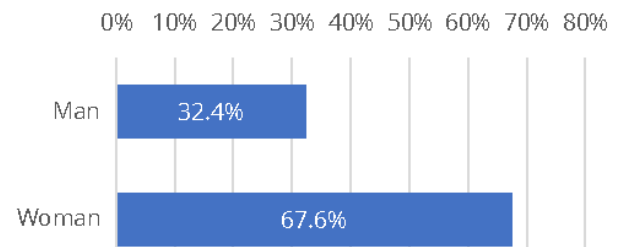


Figure 21. Identification of the respondents

The surveyed students were asked about the advantages and disadvantages of the online teaching-learning-assessment-method.

Summarizing the answers received, among the advantages suggested by the respondents we list:

- The flexibility of the program and the convenience of working in the personal space
- Time saving - reduction of time spent in traffic and its use for personal activities, interests
- Possibility to participate in classes in parallel with other activities at home or at work (in the case of employed students)
- Reducing or eliminating the costs of accommodation in student campus or rent, parking fees, reduction of stress due to lack of parking spaces
- Easy access to study materials by uploading them on the university's elearning platform
- Facilitates teamwork for projects that involve the use of computer products such as Google docs, Slides, in which students can work simultaneously.

Among the disadvantages of the online teaching method suggested by the respondents, we list:

- Internet connection problems, unforeseen interruptions during class hours - program disruption
- Lack of direct interaction (socialization) with colleagues and teachers
- The rigidity of some teachers to adapt to the online teaching method
- Difficulty staying focused on presenting the course for a long time (more than 1.5 hours or more); difficulties in understanding the teacher's verbal message
- No breaks
- Sedentary lifestyle, screen addiction, isolation are encouraged
- Favors copying in exams
- The practical activities of laboratory type at the faculties with technical profile are deficient or cannot be held

- Too much information in case of some disciplines, more requirements (homework, projects)
- Lack of devices with which students can participate in online classes
- The personal environment does not favor concentration and learning
- Teachers are not sure that students are present at the course, even if they appear connected, the impossibility of observing students' reactions, facial expressions.

4 CONCLUSIONS

The results of the study reveal some important aspects related to the teaching-learning-assessment process. The advantages of the online way of working were highlighted, which focus mainly on reducing students' expenses, on the accessibility of study materials and the possibility for students to work at the same time as participating in teaching activities. This last aspect cannot be considered positive in the context of the efficiency and effectiveness of the didactic process. The student will only do figuration, it cannot be about his active participation, attention, involvement in the learning act.

Also, the disadvantages suggested by the respondents highlights especially in terms of risks related to the appearance and development of addictions and diseases: sedentary lifestyle (several breaks are required online to rest the eyes), depression (due to limited contact with peers) and other mental illnesses. On the other hand, online assessments are not relevant. The risk of giving high marks to students who have not prepared, but who have copied, is very high.

Current trends in teaching aim to give an increased importance to pupils, students, quality of knowledge, learning outcomes. As it results from the answers and opinions of the respondents participating in this study, in order for the teaching-learning-assessment process to

be efficient and effective, there must be educational feedback, the teacher must have the certainty that the information was correctly received, also understood that the student can operationalize with it - things almost impossible in the case of online or hybrid classes. The premises of efficient and effective learning are related to the possibility of applying active-participatory methods such as: problematization, teacher-student dialogue, learning through cooperation and debate etc., methods difficult to apply or even impossible to apply in the conditions of online classes.

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