

## E-Learning as a Mono Technology in a Pandemic

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### Abstract

*The paper presents an attempt for a critical analysis of e-learning as a mono-educational technology in a pandemic. The subject of the study is the impact of the critical epidemic situation caused by COVID-19 in 2020 on the theoretical university training of students-pedagogues. The indisputable possibilities, advantages, but also limitations in the course of the e-learning, realized through various forms of electronic environment, are emphasized. Based on the analysis, the following conclusions can be drawn: indisputable advantages of e-learning as an assistive technology for the theoretical university training of students pedagogues; indisputable advantages of e-learning as a mono technology for the theoretical university preparation of students pedagogues in conditions of crisis and impossibility for face-to-face training; e-learning, implemented as mono technology, is unsuitable for the theoretical university training of students pedagogues in normal conditions, due to a number of limitations and shortcomings.*

**Keywords:** e-learning, mono technology, theoretical pedagogical training, pandemic, effectiveness

### 1. Introduction

The current 2020 has posed serious challenges to the world, provoked by the spread of the new COVID-19 virus and pandemic conditions. A critical epidemic situation has changed the life of every person and the activities of all spheres of society, including education. The current educational realities in 2020 necessitated changes and in the system of higher education, which are an attempt to compensate and overcome the social restrictions - physical contacts, movement of people, isolation. A way out of the current situation was offered by the various forms of distance learning and its contemporary version - e-learning. They have been present in higher education for decades. Their undeniable advantages have established them as extremely effective assistive learning technologies (Shivacheva, 2016). Over the years, their application has been perfected and expanded. In the current conditions, however, higher education institutions have been forced to use them not only as assistive technology, but as the only (mono) learning technology for a long period. It currently covers one semester (summer). A number of authors share their training experiences during the pandemic (Branekova, 2020; Delcheva, 2020; Neminska, 2020 and many others). The effectiveness of application of e-learning is determined not only by the skills of lecturers and students to work with these technologies, the quality of the connection and the available devices. The effectiveness depends to a large extent and on the nature of the educational content in a certain specialty and the specific academic disciplines. This article presents an attempt for a critical analysis of e-learning as a mono-educational technology in the conditions of a pandemic in the mainly theoretical university training of students-pedagogues.

### 2. Methodology of the research

#### 2.1. Object and subject of the research

The *object* of research is the process of training students in pedagogical disciplines.

The *subject* of research is the effectiveness of training students in pedagogical disciplines through electronic form as a mono technology in pandemic conditions in 2020.

### 2.2. Aim of the research

The *aim* of the research is to derive (outline):

- opportunities and advantages, but also
- restrictions

in the course of e-learning as a mono technology in the pandemic in 2020, realized through various forms of electronic environment.

### 2.3. Methods of the research

The main method in the present study is the analysis of the aspects of the learning process of students through electronic form as mono technology.

Another research method used is a comparative analysis of the course and results of training in students trained in electronic form as a mono technology in 2020 in the pandemic, on the one hand, and in electronic form as an assistive technology in the period before 2020., on the other hand.

При отчитане на разликите в успеха на учениците в обучението лице в лице и онлайн се използват методи за *статистически анализ* за сравняване на независими откъси (групи) - *T-тест* и метод за *сравняване на дисперсии* ( $\sigma^2$ ).

### 2.4. Contingent

The contingent of the research is a total of 100 students from the Faculty of Pedagogy, with whom we worked together during the summer semester of the 2019/2020 academic year. Their distribution by specialties, educational degree and studied discipline is as follows:

#### *Bachelor's Degree*

- Programme in Social Pedagogy, 3<sup>rd</sup> year, full-time education (courses "Andragogy" and "Working with aggressive pupils");

#### *Master's Degree*

- Programme in Primary School Pedagogy. Information and Communication Technologies in Primary School, part-time study (course in Pedeutology);
- Programme in Special Pedagogy - module Speech Therapy, part-time study (course in Diploma Design);
- Programme in Programme in Special Pedagogy - module Resource Teacher, part-time study (course in Diploma Design);

#### *Postgraduate qualification courses*

- Additional professional qualification "English Language Teacher", part-time study (course in Pedagogy);
- Professional qualification "Teacher", part-time study (course in Theory of Upbringing).

In addition to the indicated participants in the sample, in the course of the analysis results were used from the training of students from previous semesters and years, carried out through electronic form as assistive technology.

### 2.5. Criteria of the research

The main criteria of the study are:

- characteristics of the communication between the subjects in the educational process (lecturer and students);
- level of current participation and preparation of students;
- independence and authorship in preparing the tasks;
- success of students.

## 3. Results of the survey

This analysis covers the characteristics of the process of education of students from the Faculty

of Pedagogy of the Trakia University - Stara Zagora through electronic form as a mono technology in the pandemic in 2020. The results are compared with the data from the education of students through electronic form as assistive technology before the pandemic 2020.

### **3.1. Characteristics of the communication between the subjects in the educational process**

In normal living and learning conditions before 2020, lecturer-student and student-student communication includes a variety of options and means: direct contacts; use of intermediaries - mobile phones, personal and group e-mails, electronic platform *Moodle* of the Trakia University, Facebook (personal and the group), messenger and other chats, etc. Despite the rich opportunities, the main forms of communication were realized through direct contacts during lectures, seminars, consultations and informal conversations - talks, discussions, advice and more. The advantages of the face-to-face training is in the uniqueness of the communication depending on the participants and the created situations; management of the cognitive process of students by the lecturer; management of student activity by the lecturer; the inclusion of elements of conversation and provoking students' thinking; search, sharing, reasoning and justification by students of their own experience, positions and opinions; presentation and defence of course assignments; feedback and detection of difficulties, misinterpretations, questions and their timely clarification; the accessibility and provability of the exhibition; personal perception and emotionality, etc. The other forms had a supporting function - to clarify, in case of problems, difficulties, unexpected situations, illness, etc.

The imposed social restrictions (physical contacts, movement of people, isolation) in the beginning of 2020 as a result of the pandemic caused by COVID-19 radically changed the communication between people. The typical and predominant direct face-to-face interactions were massively replaced by virtual contacts through the use of various electronic devices and environments. In the course of training this semester, communication between the subjects in the educational process was limited in terms of direct contacts. They were replaced by others which acquired basic status.

The use of asynchronous means of communication (personal and the group e-mails, electronic university learning platform, chats, etc.) retained its supporting function. However, it has expanded significantly with the inclusion of setting and submitting course assignments and works, instructions and guidelines for procedures and work with the electronic platform of the university, feedback on the implementation of tasks and assessments of procedures and more. Disadvantages of this way of communication is the possibility of frequent ambiguities, and hence mistakes and prolonging the process over time with a series of correspondences.

The place of synchronous communication via mobile phones has also expanded, and they have partly taken over the functions of face-to-face communication regarding consultations, clarification of issues and difficulties in the learning content. Direct face-to-face communication between the subjects in the educational process was replaced by organizing virtual classrooms through *Google meet* and the electronic learning platform of the Trakia University. However, its effectiveness is relative and is determined by the degree of preparation and involvement of students, by the nature of the educational content. The activity of students remains high for a short time, when the video connections are one-time and rather of an organizational nature. Spatial distance demotivates, it is difficult to maintain the attention of students for a long time, and the feedback is more difficult. The challenge for the lecturer is to be creative in selecting the accents in the educational content, to including elements of conversation and selection of questions, approach to students, ability to mobilize and organize them. This is a significantly more difficult task than face-to-face training. Virtual classrooms are particularly unsuitable for part-time study, where students have a large number of hours per day - up to 10 hours. From both a psychological and a health point of view, it is inappropriate to force students to stay in front of the computer for so long. This necessitates a reduction of classes, and hence a limitation of the professional role of

the lecturer.

The summary of the nature of the communication between the subjects in the educational process in the beginning of 2020 in the conditions of the pandemic caused by COVID-19 shows that it partially compensates for the direct face-to-face communication. The deficit of direct pedagogical communication and its educational functions reflects on the students. The pedagogical guidance of the lecturer on the students is limited and their preparation is more based on their skills for self-organization and learning.

### **3.2. Level of current participation and preparation of students**

It is a practice at the Trakia University to insist for the presence of students without going to extremes. This requirement ensures adequacy and orientation in the learning content and the organization of work in the respective discipline. The extraordinary situation caused by COVID-19 necessitated extraordinary measures in higher education. One of them is an official certification of the semester for all students. This measure is correct, but it gave the opportunity to students who have not fulfilled their obligations during the semester - do not have any attendance (virtual), completed tasks, work in the e-learning platform of the university, etc., to receive certification of the semester and appear at exam. As expected, such students could not pass their exams.

In the face-to-face training in previous years, the schedule for the presentation of individual course works during the semester (for full-time training) must be followed, because otherwise the lesson fails and students are responsible not only to the lecturer but also to their colleagues. Individual consultations with the lecturer for the preparation of course assignments were waged every week. Thus, the lecturer has the opportunity to timely direct and manage the independent work of students. They not only hand over their tasks, but also present and defend them in front of the course. As a result of such an organization, the learning content is meaningful by everyone from a different point of view, its practical application is found and the students develop skills for assessment and self-assessment. The epidemic situation during the summer semester of 2020 had a certain demobilizing and disorganizing effect on the students. It is observed that students participate in online forms without being prepared and participate formally. The analysis of their activity shows that the majority of them (both full-time and part-time) postpone the implementation of the set current tasks until the deadlines for conducting the examination procedures. This practically did not provide an opportunity for their presentation and defence front the course. Another disadvantage of the work was that the consultations were reduced to clarifying the topic of the course work, without the current possibility of the lecturer to monitor the progress of preparation, as communication with students was limited. In this sense, during the summer semester, students studying only through e-learning were deprived of these aspects of academic preparation compared to face-to-face learning.

### **3.3. Independence and authorship in preparing the tasks**

An element of academic training is the assignment, preparation, presentation and defence of course assignments by students. One of the criteria for their evaluation is independence in the preparation and authorship. In the conditions of a pandemic in online learning due to the above circumstances (mainly limited consultations and a larger share of students' self-preparation) this requirement is not so significant. Emphasis is placed on the development of students' skills to navigate the learning content and the materials available on the network, to able to use critically available materials to perform their concrete task. For this reason, during the summer semester of 2020, the check for plagiarism of the submitted course assignments was dropped and a greater tolerance was shown towards the authorship and independence of the students.

From the mentioned specialties, which were worked with during the summer semester of 2020, course assignments were assigned to the students from: Programme in Social Pedagogy (regular education) - for current control and final assessment; Programme in Special Pedagogy (Master's degree, part-time education) - for final control; professional qualification "Teacher" and additional

professional qualification "English Language Teacher" - for final control.

In the face-to-face training the course assignments in Andragogy (for the Programme in Social Pedagogy) are conducted as:

- presentation of a developed author's course for adult education on a topic related to the specialty of students,
- or by preparing and conducting a specific method of adult education on a topic related to the specialty of students.

The presentation of the course assignments, thus organized, guarantees independence, demonstration of comprehension and mastery to a certain extent of the learning content and professional skills. In online learning, the presentation of course assignments is eliminated, and emphasis is placed on the ability to enrich and expand the theoretical presentation of a particular problem in the learning content. To some extent, these types of tasks are reproductive in nature and largely allow for borrowing. The presented developments show this, as well as a lower degree of depth, criticality and precision. Formal borrowing is also a reason for mistakes, as consultations with the lecturer did not take place. From this point of view, the criteria differ, and in online training the results are definitely lower.

In the face-to-face training, the Diploma Design exam (for the Programme in Special Pedagogy) is held in person with the opportunity for students to use textbooks, but independently to construct a concept of scientific pedagogical research in the specialty and on a downloaded topic. Thus organized the exam guarantees independence, authorship and demonstration of comprehension and mastery to a certain extent of the educational content. The online exam eliminates the mandatory requirement for authorship, and focuses on the ability to be critical if using developments found on the web; to correct them and to comply with scientific requirements. Formal borrowing carries the risk of making mistakes, as there is no guarantee that the works published on the Internet are correct. From this point of view, the criteria differ, but to a certain extent guarantee an objective assessment of the formed knowledge and skills in the discipline.

In the face-to-face training, the exams in Theory of Upbringing (for the course for professional qualification "Teacher") and Pedagogy (for the course additional professional qualification "English Language Teacher") are conducted in person through tests on paper. As these students do not have access to the e-learning platform of the university, in online learning the final control is formed on the basis of a developed and submitted course assignment. It is personal depending on the specialty of the student. It is formulated in such a way as to ensure the formation of certain professional competencies and knowledge of the main components of the educational content in their integrity and practical orientation.

The construction of the course tasks puts serious challenges to the teacher to ensure the effectiveness of training and objectivity of assessment. Despite the creative intentions of the lecturer, however, in many cases in online learning as a mono technology these criteria are achieved to a lesser extent.

#### **3.4. Success of students**

The success of the students from the studied sample in the face-to-face and online learning is determined by:

- the same control and evaluation procedures for:
  - o students in the Programme in *Social Pedagogy* for the discipline Andragogy - through an electronic test in the electronic platform of the university;
  - o students in the Programme in *Primary School Pedagogy. Information and communication technologies in primary school* for the discipline Pedeutology;
- different control and evaluation procedures for:
  - o students in the Programme in *Special Pedagogy - module Speech Therapy* for the course Diploma Design;

- the students from the additional professional qualification “*English Language Teacher*” for the discipline Pedagogy;
- the students from the Professional Qualification “*Teacher*” for the discipline Theory of Upbringing.

In Fig.1. the ratio between the average success in these groups in face-to-face and online training is presented:

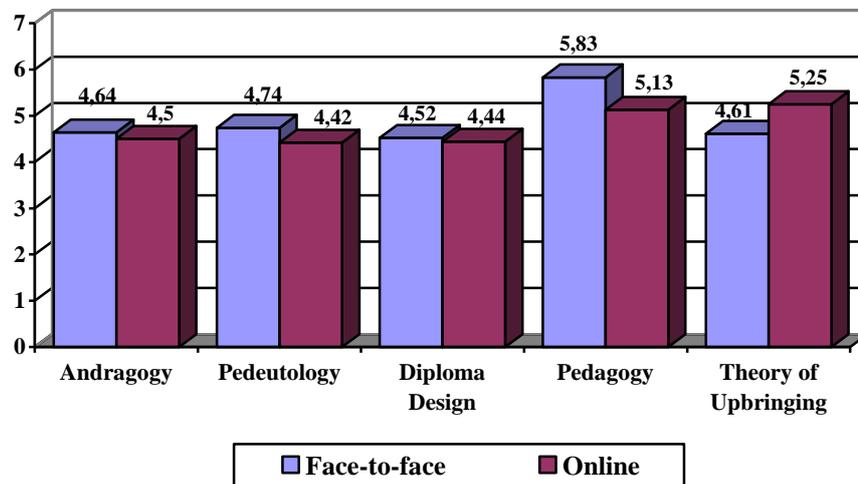


Figure 1. Ratio between average success in face-to-face and online learning

The data show that in almost all courses the average success in face-to-face training is higher than in online training. Statistical analysis by *T-test* shows that a statistically significant difference is found at  $P_{(t)} = 95\%$ :

- in the course in Pedagogy in face-to-face training;
- only in the Theory of Education course in favour of online learning. In this case, however, it should be taken into account that half of the students trained only through the online form did not do their coursework and in this sense did not take the exam. Assuming that their grades are low, the average success will be significantly lower than the face-to-face training. This result carries the risk of reduced motivation and dropout.

#### 4. Conclusions

The analysis of e-learning as a mono-educational technology presented the indisputable opportunities, advantages, but also limitations in the course of e-learning, implemented through various forms of e-learning environment. Based on the analysis, the following conclusions can be drawn:

- indisputable advantages of e-learning as an assistive technology for the theoretical university training of students pedagogues;
- indisputable advantages of e-learning as a mono technology for the theoretical university preparation of students pedagogues in conditions of crisis and impossibility for face-to-face training;
- it can be assumed that the use of e-learning as a mono technology for the theoretical university training of pedagogues in Master’s Degree is more appropriate and effective;
- e-learning, implemented as mono technology, is unsuitable for the theoretical university training of students pedagogues in normal conditions, due to a number of limitations and

shortcomings;

- e-learning, implemented as mono technology, is especially inappropriate and ineffective at the beginning of the training of pedagogues.

In conclusion, it can be stated categorically that e-learning is appropriate in the theoretical preparation of students in pedagogical disciplines. It corresponds to the global technological trends and preferences of the digital generation of students. However, it is recommended to use it as an assistive technology or at least not as the only educational technology according to the nature of the educational content of pedagogical disciplines and the irreplaceable importance of direct lecturer-student and students-students contact for its understanding and in-depth mastering, for formation of professional pedagogical skills and personal characteristics of future pedagogues. „Each institution and each discipline or area must find the most appropriate combination of technologies and resources to enhance the pedagogical impact, but without creating restrictions for participants and without risking the quality of training and service (Blagoeva, 2020: p. 10).“

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