

THE DIGITAL INSTRUCTION OF PRE-SERVICE TEACHERS

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Abstract

The teaching profession is confronted with new challenges. The new information and communication technologies determine restructuring, modifications, changes and transformations with regard to the initial training paradigm of the teaching staff. Digital skills are one of the weak spots in teachers' initial and continuous training. In order to appeal to the new generations of students ("digitally native" ones), the educational environment must adapt itself to the digital world.

The use of new information and communication technologies within the educational process is a topic that is closely linked with the reform process of the pre-service teacher training system in Romania.

Keywords: *Pre-service teacher training, Computer-assisted instruction; New information and communication technologies.*

1. Description of the European context

The importance of investing in education and training is the central idea of educational policy documents at European level. On the occasion of the summit in Goteborg in November 2017, the European Commission outlined the vision of an European space of education and announced an action plan for the digital education (COM(2017)673).

The European systems of education and training must react to the challenges and opportunities of the digital transformation of education. Given that digital transformations affect people's personal, social and professional life, it is necessary that each person should invest in acquiring and developing digital skills throughout his/her entire life.

The action plan for digital education establishes the ways in which the education and training systems can capitalize on innovation and digital technologies, therefore supporting the development of such digital skills which are necessary both in life and professionally. This action plan is meant for schools, education, teacher training and the higher education system.

Two important themes, adopted in May 2017, are the bedrock of the action plan for digital education: *EU's new agenda for higher education and Developing schools and the excellent quality of teaching for a good start in life* (COM (2017) 248).

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The action plan has three priorities (COM (2018) 22):

1. A better use of digital technologies throughout the learning and teaching process;
2. Developing digital skills and abilities which are relevant to the digital transformation;
3. Improving education with the help of a better analysis of data and a prospective vision.

In order for EU Member States to cope with challenges, the action plan establishes a series of measures for each priority:

- (i) Provision of instruments to help the teaching staff and instructors to better use technologies, including the supply of a better Internet connectivity;
- (ii) Specific actions meant for the development of relevant digital skills;
- (iii) Increased efforts but also new efforts to improve education with the help of concrete data and a better analysis.

The action plan outlines the European initiatives that the Commission in partnership with the member states, interested parties and society, will put into practice by the end of 2020.

On April 25th 2018, the Parliament of Romania adopted the resolution no. 21/2018 through the Chamber of Deputies - regarding the Commission's official statement towards the European Parliament, the Council, the European Economic and Social Committee and the European Committee of the Regions on the action plan for digital education. The points of view expressed are compliant with the recommendations of the European Commission, but unfortunately they are rather vague. Romania has not yet established a series of specific measures regarding the implementation of the action plan for digital education.

In 2017, the Open Educational Resources made it to the public agenda of Romania and although they were grouped into several strategic documents, they didn't merge into a coherent public policy.

2. Digital instruction in the initial training period

Teacher education in secondary school is provided by specialized departments within universities, with precise tasks regarding the initial and continuous training of teachers, i.e. The Teacher Training Department.

Designed as a coherent process, the initial training of the teaching staff provided by the specialized departments is done based on a curriculum structured into 3 components: the core curriculum, optional curriculum and elective curriculum.

The core curriculum comprises the courses and teaching activities which are compulsory for level I and II regarding teacher certification, and it includes the following package of courses:

- a) courses in the field of fundamental psycho-pedagogical training - 18 credits;
- b) courses in the field of teaching methodology and specialized training- 12 credits.

The optional curriculum encompasses the courses and teaching activities that are compulsory in order to be awarded the Cycle II teacher certification. The optional curriculum comprises the following packages of courses:

- a) courses on optional psycho-pedagogical training - 10 credits;
- b) courses on optional teaching methodology and specialized training - 10 credits.

The elective curriculum includes two courses – 10 credits. One course is to be chosen from each of the two groups of elective courses provided by the curriculum for the Cycle II teacher certification.

Cycle I teacher certification is awarded following the obtaining of 30 ECTS credit points according to the curriculum as follows:

- a) 18 credit points corresponding to the package of courses in the field of fundamental psycho-pedagogical training;
- b) 12 credit points corresponding to the package of courses in the field of teaching methodology and specialized training.

For Bachelor's degree studies with dual major, the minimum number of credit points necessary to be awarded the Cycle I teacher certification is 35, according to the curriculum. This figure results from adding up 5 credit points in relation to the teaching methodology of the 2nd major. These 5 credit points cannot be accumulated at the level of the 60 credit point package corresponding to Cycle II teacher certification.

Cycle II teacher certification is awarded following the obtaining of a minimum 60 ECTS credit points, by cumulating the 30 credit points corresponding to Cycle I teacher certification with the 30 credit points corresponding to Cycle II teacher certification as follows:

- a) 18 credit points corresponding to the package of courses in the field of fundamental psycho-pedagogical training;
- b) 12 credit points corresponding to the package of courses in the field of teaching methodology and specialized training (for one major) or 17 credit points (for dual major);
- c) 10 credit points corresponding to the package of courses on optional psycho-pedagogical training;
- d) 10 credit points corresponding to the package of courses on optional teaching methodology and specialized training;
- e) 10 credit points corresponding to the two elective courses.

According to the 1st level curriculum, the fundamental courses, such as *Psychology of education, Fundamentals of Pedagogy, Theory and methodology of the curriculum, Theory and methodology of instruction or Theory and methodology of evaluation*, are studied by students in the first three semesters, undertaking training in the field of Psychology and Education Sciences.

Alongside these subjects, the course called *Classroom management* has become a compulsory core one although for many years it has been included in a package of elective courses of the psycho-pedagogical module. The timing of this course at the end of the teacher training programme, that is, the last semester (the 6th semester), suggests the intention to equip students with managerial skills based on

the theoretical and practical experience already acquired over the years, including the teaching practice. The course of classroom management, due to the relatively small number of contact hours (14 course hours and 14 seminar hours), only creates the possibility to inform students about the teacher's managerial activities and the teacher's roles, stimulating the students to participate in debates, to make critical assessments and comments or to conduct case studies in order to develop class management skills and strategies.

A novelty and at the same time in compliance with the standards imposed by the European educational policies, the introduction in 2008 of the compulsory course called "Computer-assisted instruction" to the core curriculum, being allotted 14 course hours and 14 seminar hours, provided the foundations for getting teachers familiarized with the new information and communication technologies. For a long time, the Romanian educational system has been faced with a unfortunate situation because of the fact that during the pre-service teacher training period there was no pursuit in acquiring digital skills.

Teaching methodology is also a core course for the training of the teaching staff, which is studied throughout a semester. Starting with 2008, the teaching practice has been extended to two semesters all in the final training year, with a double number of hours compared to the previous period, amounting to 78 hours for Cycle I (which accounts for 22 % of the overall number of training hours allocated for this level) and 42 hours for Cycle II (namely 17 % of the overall number of training hours allocated for this level). By adding up, a prospective teacher who successfully completes Cycle one and Cycle II performs 120 hours of teaching practice, i.e., much more than the number of hours allocated for any theoretical course, in other words, accounting for about 20 % of the overall number of hours.

The initial psycho-pedagogical, methodological and practical training of students and graduates opting to become teachers is done in compliance with the set of professional and transversal skills that shape the specialized profile of the prospective teacher.

For both Cycles, the curriculum is based on a set of professional and transversal skills, necessary for the profession of teaching:

Professional skills:

1. Lesson planning;
2. Lead and monitor the learning process;
3. Assess educational activities;
4. Use digital technologies;
5. Get to know, counsel and treat children differently;
6. Classroom management.

Transversal skills:

1. Institutional development of both school and school-community partnership;
2. Career management and personal development;
3. Educational applied research.

Within the set of skills, the use of digital technologies is considered to be a professional skill. The capacity to use digital technologies and to keep up with their rapid pace of evolution is an essential condition for the 21st century teacher, as these technologies are integrated to every field of activity.

In the 21st century, teachers must possess digital skills to cope with the challenges of the information era. On the one hand, the necessity for teachers to be equipped with an adequate level of digital skills is an integral part of professional competence and, on the other hand, these skills are both a stimulus and catalyst for the development of students' digital skills as a prerequisite of their insertion to the labour market.

In what follows, we shall enlarge upon the acquisition of the digital skills within the teacher training programme in view of the certification of these skills for the teacher profession:

C4. Use of digital technologies

C4.1. Know and understand the basic concepts, theories and methods of computer-assisted instruction; C4.2. Develop the necessary skills in order to design, implement, monitor and assess teaching activities by using different digital educational resources (dedicated software, e-learning platforms, web 2.0 applications, open educational resources - OER etc.); C4.3. Know and comply with the ethical and legal norms within the virtual space; C4.4. Express a positive attitude towards the integration of information and communication technology to education; C4.5. Develop communication and collaboration skills within the virtual environment.

3. Investigative approach

By conducting an investigation our goal was to know the trainees' opinion on the integration of technology to the teaching activity associated with the assessment of specific experiences, as student enrolled in the teacher training programme.

This evaluative study is inquiry-based, using the questionnaire as an instrument.

The make-up of the student sample runs as follows:

The sampling was done according to: the faculty and the year of study students are enrolled in.

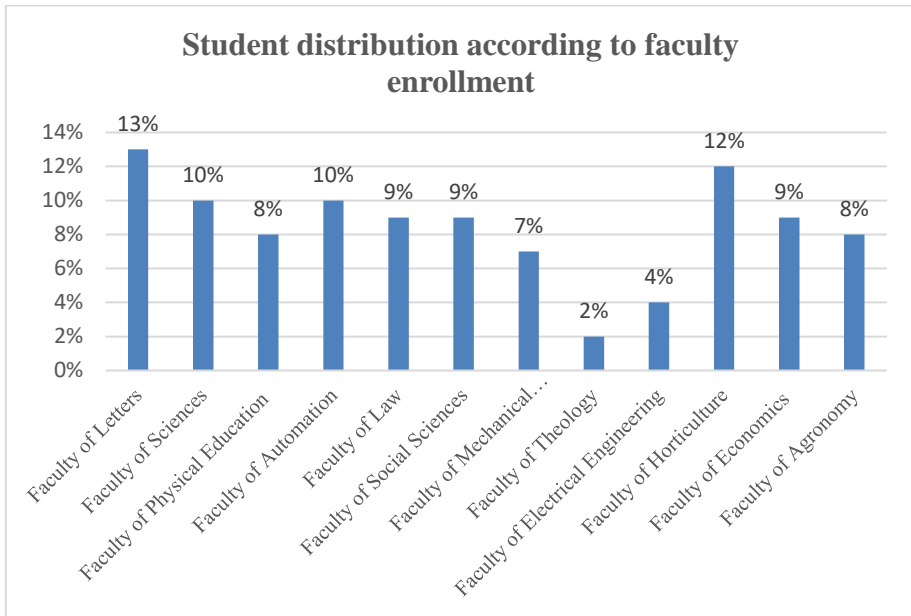


Figure no. 1. Student distribution according to faculty enrollment

The make-up of the student sample is significant due to the fact that the opinions of students enrolled in all faculties of the University of Craiova have been recorded.

Students participating in the study consider that the new information and communication technologies contribute to the efficientization of academic learning: highly 52 %, a lot 30 %, little 8 %, very little 7 %, none 3 %.

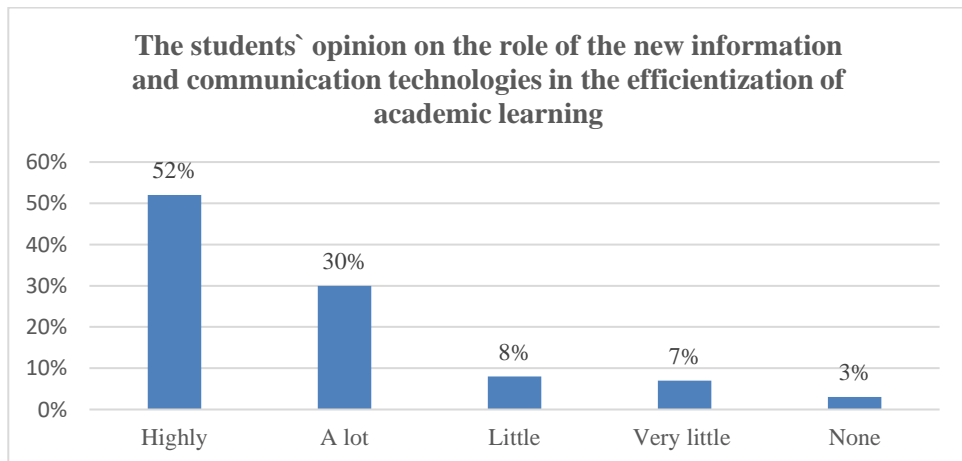


Figure no. 2. The students` opinion on the role of the new information and communication technologies in the efficientization of academic learning

With reference to the teacher-student rapport, the information and communication technologies are used mainly for delivering new academic/scientific information, for the exchange of organizational information (timetable, assessment planning), for announcements of seminar tasks or final evaluation results.

Inquired if they had an email address, all students answered Yes, but only a percentage of 60 % use the email address for educational purposes and just 25 % for communicating with teachers. Very often, in their communication with teachers, students use Facebook groups.

For information mining purposes, students use most often their mobile (55 %), their laptop (20 %), their PC (10 %) and their tablet (10 %):

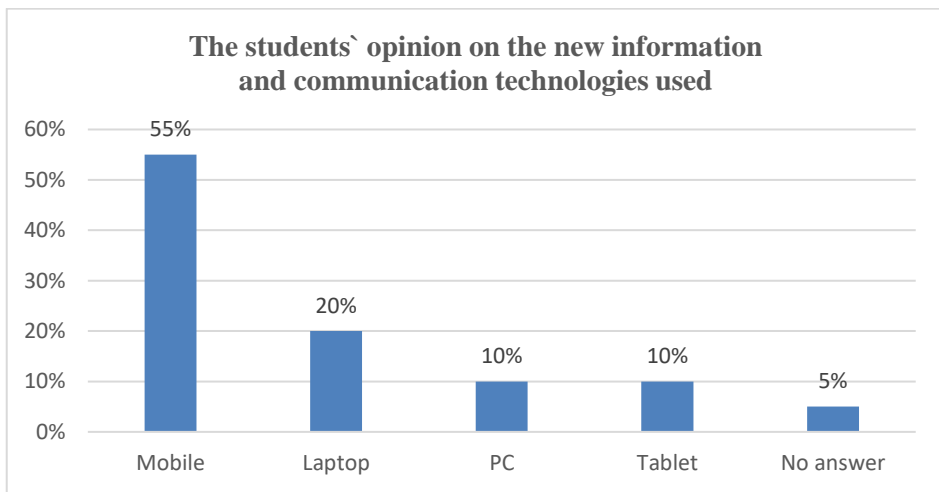


Figure no. 3. The students` opinion on the new information and communication technologies used

Students consider that material resources necessary for a digital educational system are insufficient both at the level of universities as well as at the level of primary and secondary education where they carry out the teaching practice. Also, they consider that it is necessary to have unlimited access to the Internet in all classrooms.

Inquired if the course “Computer-assisted instruction” enables them to acquire digital skills as prospective teachers, the students’ answer was negative. Further on, we shall provide the motivation behind the answer to this question: the time allocated for this course (1 course hour and 1 seminar hour per week), poor logistics or infrastructure (computers, interactive blackboard, lack of Internet), etc.

The prospective teachers consider that upon the completion of the teacher training programme they will have acquired advanced digital communication skills, they will handle information easily being able to use digital resources that are available throughout the teaching process, they will be able to show school results in digital format and, last but not least, they will be able to identify relevant educational software that they will use in their activity.

At present, upon the completion of the pre-service teacher training programme, graduates will possess digital skills in relation to the study programmes as well as deriving from their informal and non-formal education.

4. Conclusions

In the current context, throughout the pre-service teacher training programme, we consider that students should put an emphasis on using technologies in order to learn and communicate. Interactive simulations, digital and open educational resources as well as advanced instruments for collecting and analyzing data are resources that can be used in all the courses pertaining to this programme in order to foster conceptual understanding.

Students live in a digitalized world, possessing a wide set of skills with regard to using technologies. The university teacher has to play the role of coordinator of the information flow and therefore s/he must possess the knowledge and skills of using the new information technologies in order to be able to orient students towards the information-based environment.

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