E-LEARNING IN PROFESSIONAL AND TECHNICAL EDUCATION –
ROMANIAN EXPERIENCE

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Abstract

In a society where traditional education is losing terrain and teachers are no longer the sole source of information, there is a need for a paradigm shift in the approach to teaching and learning. Thus, e-learning is becoming a preferred learning method not only by students but also by teachers or trainers in the field of technical and vocational education. In Romania, although e-learning is less used in the technical and vocational education, there are attempts to implement it widely. This research aims to explore the relevance of eLearning platforms used by students and teachers in the classroom. The sample was formed by 135 people, including 60 teachers/trainers and 75 students from technical colleges from Bucharest. It used both quantitative and qualitative research. It was based on questionnaires given to teachers and students, and interviews for trainers from technical and vocational education schools in Romania. Research results show that both teachers/trainers and students in technical and vocational education do not use too much the eLearning technology in the classroom. E-learning requires costs for its design and maintenance. In conclusion, there is interest in using e-learning in technical and vocational education in schools in Romania but teachers do not always manage to keep up with new technologies. On the other hand, students learn faster and show more interest if e-learning is used. In this paper, we present the research done and its main results.

Keywords: E-learning, technical education, Romanian experience.

1 INTRODUCTION

In a society where traditional education is losing terrain and teachers are no longer the sole source of information, there is a need for a paradigm shift in the approach to teaching and learning. Thus, e-learning is becoming a preferred learning method not only by students but also by teachers or trainers in the field of technical and vocational education. In Romania, although e-learning is less used in the technical and vocational education, there are attempts to implement it widely. In Romania, e-Learning experiences a rapid development, especially after 2005 [11]. After this period there were many pilot educational projects based on e-Learning and Web technologies [14] that could be implemented in schools and universities. Unfortunately most of them were not continued after they finished. Most of those projects were focused on infrastructure and less on content [11]. However, there are some e-Learning content resources that are used in the schools or universities in Romania, such as e-scoala¹ for students, teachers; SEI portal - an e-learning portal²; AeL [14], SIVECO product, launched in 2001, an e-Learning platform for school education, higher education, corporations, etc; MOODLE platform with its associated resources has started to be implemented, first in some educational projects [12], and step by step, in schools, and universities.

In Romania, as in other EU countries, the quality assurance plays an important role in modernizing education in all sectors included the VET schools / institutions (VET – Vocational and Technical Education). The quality of technical vocational education in Romania [13] is directly related to the achievement of the learning outcomes (knowledge, skills and competence achieved at the end of the learning process) that fulfill the key stakeholders’. Such quality assurance can be achieved through the use of E-learning that is a part of this modernization at the start of 21st century [12]. Following the Bologna process, many countries have benefited from the proposed objectives of including e-learning in vocational and technical education. For example [15], Andorra, Cyprus, Finland have flexible studies including e-learning opportunities; Poland has developed public and technical higher education institutions with e-learning programs. Romania is also one of the European countries that has tried to take advantage of the opportunities provided in the Bologna Prosecution on e-learning in vocational

¹ www.e-scoala.ro
² www.portal.edu.ro
and technical education. As noted above, however there is still much to be done in this direction, especially in the direction of educational resources, training of teachers, their attitude, etc.

The purpose of this paper is to make a research regarding the attitude of teachers with different ages, specialties and experience in education regarding to E-learning in vocational and technical education. We will look also to the student attitude towards e-learning. The final goal of this research is to improve the learning process and the quality of the education and professional training system in Romania.

The sample was formed by 135 people, including 60 teachers/trainers and 75 students from technical colleges from Bucharest. It used both quantitative and qualitative research. It was based on questionnaires given to teachers and students, and interviews for trainers from technical and vocational education schools in Romania. Research results show that both teachers/trainers and students in technical and vocational education do not use too much the eLearning technology in the classroom. E-learning requires costs for its design and maintenance. In conclusion, there is interest in using e-learning in technical and vocational education in schools in Romania but teachers do not always manage to keep up with new technologies. On the other hand, students learn faster and show more interest if e-learning is used. In this paper we present the research done and its main results.

This paper is organised as follows. In the next section we outline the methodology that we used in our research. Section 3 gives the results while Section 4 draws the conclusions.

2 METHODOLOGY

The sample was formed by 135 people, including 60 teachers/trainers and 75 students from technical colleges from Bucharest. It used both quantitative and qualitative research. It was based on questionnaires given to teachers and students, and interviews for trainers from technical and vocational education schools in Romania. We used purposive sampling.

The questionnaire for teachers has 11 questions, and the questionnaire for students has 9 questions. About 40% of the total number of questions designed of each questionnaire are open and multi-choice question questions, and about 60% are closed questions. A fragment of the questionnaire for teachers is given below. The structure of the questionnaire can be deducted easily from the way in which we present the results in the next section.

1. Please tell us whether you used eLearning platforms during the 2015-2016 school year?
   □ Yes
   □ No

2. If you answered yes at the question above, please indicate us in which moments did you use eLearning platforms?
   • In the process of learning
   • Uploading teaching materials;
   • Teacher-student communication;
   • Assessments

3 RESULTS

Using e-learning platforms - Half of the teachers participating in the survey (50%) agree with using another approach for the education system, namely using virtual platforms to increase students' interest in their learning. Interviewed teachers said they use eLearning platforms rather rarely (23%). Teachers do not use eLearning platforms on a regular basis, but only occasionally. Teachers use mostly forums and assignments from virtual platforms. Teachers participating in the survey believe that the discussion forums on virtual platforms are very useful and lead to the improvement of the education system and leads students to create a virtual community that is useful for performance
Improvement in learning, removing student timidity in the communication platform, language development, and last but not least, the virtual introduction of civilized online behaviour.

Students felt that the most important time for using the eLearning platform is the one devoted to learning (60%), after which, in the order of their priorities: loading of teaching materials and knowledge evaluation. Teacher-student communication on eLearning platforms is evaluated as important by a low percentage of the students (20%). This is due to students’ reluctance to communicate more often with teachers, their fear of not asking wrong questions, and last but not least because of the lack of a student-teacher communication code.

Learning virtual media – The most commonly used are: the AEL platform (in a ratio of 67%), followed by Moodle and Wikispaces. AEL is a E-learning platform developed by a Romanian company, SIVECO. Its high proportion of usage (67%) is due to the fact that AEL was the starting point of eLearning platforms in Romania, providing support for teaching and learning, evaluation and grading, administration, design and monitoring of content in all curricular areas [3, 4, 5, 8, 9] of the Romanian education system. Some of the reasons given for using AEL are:

- AEL Educational is a modern eLearning platform, created at national level, which does not require the physical presence of the student in the classroom. S/he can study and practice both at school and at home.

3 http://www.advancedelearning.ro/
AeL Educational has a friendly interface and a flexible structure, facilitates understanding of the subjects taught and increases learning efficiency, stimulates creativity and facilitates learning by practice, by discovery, not by memorization.

- It also provides the opportunity to demonstrate real-life complex phenomena that students can repeat.
- Digital and dangerous experiments are conducted in a virtual environment that is safe.
- Virtual laboratories are much easier to install and run than traditional laboratories, and the cost of purchasing lab materials is reduced by using interactive lessons that can be reused at any time.

The use of MOODLE and Wikispaces platforms in the teaching process is still in its infancy. Teachers have been trained on MOODLE platforms through nationally organized programs but have not been able to use them in the educational process because other existing platforms (e.g., AeL) were a priority for decision-makers. Following the interviews, teachers believe that known eLearning platforms such as Moodle, Wikispaces are useful in conveying information and being accessed from anywhere with an internet connection and that they are going to change the traditional teaching approach.

Electronic educational resources used by teachers-trainers are: web addresses, PDF files and in a lesser extent video tutorials and their own created lessons on the platform. This situation is explicable because a nationwide training for the use of Moodle or Wikispaces for creating lessons and creating tests in didactic activity was only partially accomplished. Respondents felt that audio-video tutorials, increase students’ interest in learning; especially that through (repeating) viewing easy-to-understand tutorials students understands easier a lesson and acquire better basic knowledge.

It is worth noting the teachers’ desire to change their classical method of teaching. After analysing the responses of the interviews, it was found that through a minimum of training, teachers are able to use the teaching materials on eLearning platforms, but in the absence of continuous training, they are reluctant to create their own lessons. For teachers, online learning represents innovative ways of learning. – it permits the combination of tools that enable the creation of educational resources that helps further the reaching of the learning objectives.

On the other hand, the students (29%) consider that the activities on the eLearning platforms cause them to work together as a team. Students can exchange views on the course. E-Learning platforms help them also to finish class activities in time. 19% of the students participating in the questionnaire consider virtual platforms an effective means of learning because they are put in situations involving a lot of action, but they can also work at any time, not only during classes.
The advantages of using virtual platforms – According to the opinions of teachers, their advantages include: accessibility, flexibility and comfort. Those are especially important given the scale that electronic means took in recent years, next to independence and geographical mobility that they do offer to an educational system. And, not least, the use of diverse pedagogical methods [5, 6], the individualisation of the learning process and the concise and selective presentation of educational content that lead to a quality education. An important place it takes also the easy assessment of students by greatly easing the activities of teachers and students - although the work of teachers to create tests is triple as compared to the traditional environment. The flexibility and convenience of using eLearning allows for a more efficient management of the teaching time, but also the possibility of consolidating professional relationships with teachers from other regions of the country and the world. Other advantages of using online platforms are preferential location and access to a larger number of materials.

Increase school performance by using system eLearning - Students participating in the research, although they are regular users of a virtual community (eg. Facebook, Twitter, Yahoo messenger), do not yet know the rules of communication on a professional platform and are reluctant to use it and to establish effective contacts with their teachers. However, over 70% of the students considered that using eLearning helps them learn faster and accomplish with less effort their learning tasks. An important role has the teamwork that helps increase learning performance. Following teacher interviews, the teachers considered that the assessment offered by eLearning platforms is beneficial for a school, because students that accustoms themselves to this assessment method know what to expect and through sustained training can get better results in the evaluation tests.

The students from professional and technical education need other methods of learning, innovative ones, to supplement their lack of knowledge and make it possible to acquire skills and qualifications that cannot be gained through the traditional system of education. The resources found in an eLearning course (text, audio, images, videos, tests, questions, simulations, animations, interactive applications, video laboratories) delight students and motivate them to go through the lessons and improve their school performance.

The need to train teachers on the efficient use of virtual platforms – 33% of teachers believe that computer experience is needed, which leads to the conclusion that in recent years they have been able to improve themselves in the field of using the basic IT concepts as a result of continuous training courses and POSDRU training courses regarding modern technology, but this percentage is still very small compared to current educational needs. There is a need for training in the use of e-learning technologies. At the same time an open mind is needed for introducing the new technologies for the decision-makers in education.

The limits of eLearning in vocational and technical education and training - Training of teachers / tutors in eLearning, requires more time than allocated in the traditional system. Writing messages, preparing materials according to different student learning styles are some activities that require more creativity than in the classical learning system. The time to be allocated to the creation and development of lessons and tests is larger than in the traditional education. However once a course is developed it can be used whenever the need arises, and then this disadvantage (i.e. larger time) diminishes considerably. The time to be allocated to the feedback is also large because lack of it or answering late can have a negative effect on the learning process and in the teacher-student relationship.

Continued use of eLearning in the education system - the desire to use of the eLearning system in learning activities in at least one third of the school subjects is the optimal solution that can be reached in a first stage of using the eLearning system at a national level.

4 CONCLUSIONS

The eLearning system, although it is in its first stages in the technological education in Romania, responds to existing educational needs, as learning can take place at any time and in any place. New e-learning technologies can contribute to the professional development of teachers and make it possible to obtain better results in the field of education, especially at the moment when the information society becomes a real one. At the same time, accessing eLearning platforms offers the opportunity for teachers across the country to continue training in a system that allows for flexibility.
and reduces the constraints related to imposed learning periods of time. In a virtual environment, where students can jointly develop a material required by the teacher, this develops their collaborative and teamwork skills, analytical and synthesis skills, and the ability to use the computer and the Internet thus helping them to increase self-confidence and self-esteem.

It has been found that there is a need to improve the eLearning training methods, for the professional development of the teachers, in order to adapt to the new requirements of the new generation of students. Teacher-to-teacher communication based on electronic means, sharing experiences in and out of the classroom is also the basis for developing the dissemination of good practice between school units.

Virtual class as a learning environment created in a space where the teacher and student are separated in time and/or space, changes the traditional method of communicating, transmitting and receiving learning content. Communication between teacher and students is quick and it connects learners with teachers, classmates and with other colleagues from different places in the world.

In the current learning system, the information is obtained with a single click, the problem is knowing how to use it and getting help in synthesizing, structuring, interacting and completing different tasks. The help is usually provided by the teacher.

The following recommendations can be made:

- Professional development of teachers should be a priority for all stakeholders so that all students receive the best possible training. Professional training should couple with the latest existing technologies.
- Development of partnership networks between schools for disseminating best practices through eLearning platforms showing all activities of the established network in order to improve the educational process should be encouraged and helped by authorities.
- The re-prioritization of the ministerial priorities for equipping schools with E-learning technologies. Last but not least, it is necessary to train all teachers on a national scale to use all educational resources, including Moodle or other similar platforms, for attracting more students into the learning process.

REFERENCES


