How to Use E-Learning App in Education and Presentation of Erasmus Project

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Abstract - **The base of this paper was project *Effective e-Learning System Based on Digital Competences* in the field of strategic partnerships at the level of Erasmus KA2 activities. It will be presented several applications for interactive digital content and tools in education. The idea of this project was to show how we can increase the level of digital competence for students and teachers by using digital tools in teaching classes. The goals of this project were sharing experience with using e-learning and finding new possibilities to improve digital competences of students and teachers.**

Keywords - Erasmus, e-learning, education content, learning and new idea in ICT content, learning app.

I. INTRODUCTION

Digital competences, and related e-learning with distance communication between students and teachers, is one of the more propulsive areas in the education of the European Union in the last decade. Applications that are created exclusively to help in the implementation of digital teaching are defined as "digital tools in education". Such tools - with the development of smartphones, watches and laptops, tablets have become very popular and useful, both for teachers and students, but also for authors and publishers of textbooks and educational materials. These apps and digital tools help teachers who teach geography, foreign languages or biology, as well as for primary and secondary school students. By using digital tools and apps we can better understand James Cook's journey to the South Seas in the 18th century, the syntax of the Latin language or the chemical evolution of the universe and the formation of the first planets thirteen billion years ago.

In addition to programmers and computers experts who create such digital tools with the help of subject experts, and teachers and students, who use them, there are those who practical understand and justify the role of interactive digital tools in the learning and teaching processes of the 21st century.

At this point, we can mention some previous research, but also very recent scientific articles dealing with various forms of e-learning. For example, Awaz Naaman Saleem, Narmin Mohammed Noori and Fezile Ozdamli in the article "Gamification Applications in E-learning: A Literature Review" from 2022 [1] tried to present an overview of the complete literature concerning gamification in digital learning.

The application of some elements of gamification is also present in the tools that we will mention in our project. Gamification is particularly useful in language learning, but also in all other subjects, from an early age. Some other scientists rightly warn of a significant and logical huge increase in e-learning during and after the SARS-CoV-2 virus pandemic. A condition for the quality use of online and digital tools is a solid hardware and software infrastructure, a power connection and an Internet network. Indonesian and Indian children and teachers may have problems with the latter [2, 3], but in Europe such a thing should be flawless (as shown by the work of Virkus et al. in [4]).

Furthermore, during the use of digital tools, it was realized that certain previous teaching models are not applicable for this form of learning. Flora Amiti from Macedonian South East European University tried to explain the difference between synchronous and asynchronous learning in her article "Synchronous and Asynchronous e-Learning" [5]. Namely, despite the importance of the living word and ex cathedra teaching, asynchronous learning in the digital environment is increasingly used, even though Amita presents secondary research that proves the benefits of combining both learning methods. After all, the latest artificial intelligence program ChatGPT and its newer versions show that grading will have to be done live or in a more secure way, and that digital platforms are only a learning aid, not a means of getting better grades.

II. EDUCATION AND E-LEARNING

The project *Effective e-Learning System Based on Digital Competences* connected six EU countries: Croatia, Latvia, Portugal, Romania, Sweden and Greece, and present use of interactive digital apps and educational tools in teaching like *Kahoot*, *Kami*, *Micro:bit*, *Geogebra*, *Python*, *Storyboard*, *Google Classroom*, *Quizizz*, *Genially* and others.

Kahoot is a popular game-based learning platform, and it is a kind of deviation from the usual traditional notion of teaching by using online quizzes [6]. Kami, on the other hand, is an original educational tool for teachers and students whose platform offers a whole range of benefits, from video and voice comments by teachers and

online assessment, through blended learning and learning from home, all the way to group projects and interschool collaboration [7].

Furthermore, the Micro:bit is a very handy little computer tool, actually a pocket computer suitable for teaching computer science (coding), mathematics and mechanical engineering [8, 9]. It can be used by children, students, teachers, as well as another similar tool, Geogebru [10]. Also popular is Python [11], which is used in programming, creating applications, digital content, graphic forms, etc. Furthermore, Storyboard is a useful graphic tool that organizes images and illustrations, as well as moving animations, and is useful in the teaching of applied arts [12]. Google Classroom is as the name suggests, an educational product of the company Google intended primarily for teachers in primary, secondary and higher education. The platform is free, and lecturers use it to monitor and evaluate student assignments [13].

Quizizz is another application for learning with a game, intended for both elementary school students and the elderly who acquire new knowledge more easily with the game [14, 15].
Genially has only been around for a few years (since 2015), but it has already gained a large number of users. It is an online tool for creating visual and interactive content. The tool can be used by individual users (pupils, students), but also by whole classes. Students who are fed up with classic PowerPoint presentations distributed by Microsoft Office can use more creative tools from this manufacturer, as well as other services such as infographics, interactive images, gaming educational tools, etc. [16].
All these possibilities and all other digital educational tools are also mentioned in Tim Slade's 2018 book: The eLearning Designer's Handbook: A Practical Guide to the eLearning Development Process for New eLearning Designers [17].

In general, this paper is presentation and dissemination of project Effective e-Learning System Based on Digital Competences in the field of strategic partnerships at the level of Erasmus KA2 activities and possibilities of use more digital apps in teaching classes. The long-term effects of this project were based on education and creating opportunities for an individual to a higher standard to find a better job, higher satisfaction with life and career, and higher level of inclusion in social development thanks to meaningful use of digital competences and digital tools in education. Project Effective e-Learning System Based on Digital Competences took place from 01.09.2018. to 31.08.2021., with a budget co-financed by the European Union in the amount of 123.193,00 € [18, 19].

The project focused on sharing experience in using of e-learning and finding new possibilities to improve digital competences of students and teachers.

Methods that are used for that was teaching and learning, presentations, workshops on practical use of tools, lessons with round table discussions, creative work, on collaboration and team work.

The key outcome of project will be to increase of the level of digital competence for students and teachers by using digital tools on effective, confident and critical way [18].
Expected results of project:

- o New knowledge and experience in the field of e-learning,
- o New and high level of digital competences necessary for studies and career improvement,
- o Motivation to use new digital skills and e- learning apps effectively and creatively [18].

A. E-learning in project

This project has lots of positive objectives and someof them are easy applicable in the field of ICT and digital tools.

- o Developing digital competences of students and teachers focusing on the useful use of ICT for the teaching and learning,
- o Sharing experience on creating interactive and motivating study materials and lessonplans and using e-learning platforms and tools for creating e-content,
- o Preparing students for better exploitation of ICT potential and useful learning,
- o Preparing teachers for effective and motivating use of ICT in the classroom and e-learning platforms,
- o Assisting educational institutions to implement innovative practices related to e-learning platform supporting the needs of all learners [18, 19, 20].

B. Activities

All activities will focus on developing digital skills and implementing the digital competences into the schools regular teaching process. In this project attention will be paid to improving digital competences and using them for better study purposes and job opportunities. Students will teach each other skills and make some products using their ICT skills. During Short Term Exchange students will work into international teams to make the best of their ICT skills. During Joint Staff Training teachers will share experience on e-learning platforms and digital tool [18, ¸19, 20].

C. Project results

As are results of project it will be made a guidebook for teachers and webpage of project, Padlet materials will be a collection of lesson plans as used interactive materials that is made by students and teachers.

Other results of project will be to improved e-learning system and learning platforms at schools, shearing knowledge and experience gained in the field of e-learning, and increased competence in foreign languages.

All that will apply in digital competences of teachers and students necessary for their studies and career in future [19, 20].

All the participating schools will share results of project in many fields, and some of them will be:

o implemented innovative practices related to e-learning platform supporting the needs of all the learners and effective and motivating study materials adapted to the individual needs of every student,
o better exploitation of ICT potential for teachers and students, increased competence in foreign language,
o shared experience and good practices on using e-learning tools at schools focusing on the best practices that have developed to serve the needs of teachers and students [19,20].

D. E-learning apps

Through the use of certain applications in class, students can improve and increase their level of knowledge. They can do digital crosswords and tasks through applications, and solve tests. Through such applications, teachers can more easily and objectively monitor the student's progress.

Today, there are various digital applications on the Internet that connect teachers and students from all over the world. Applications are ready-made for all areas of education, from computer science, mathematics, logic, philosophy, mechanical engineering, library science [17, 19].

III. EFFECTIVENESS OF E-LEARNING

The conducted study was made about teaching and learning digital tools and educative content in the field of ICT. The research involves teachers and students from Romania, Sweden, Croatia, Latvia, Portugal and Greece. This are some of results of that research [18].

A. Study participants

In study participated six international school from Croatia, Latvia, Romania, Portugal, Sweden and Greece.

A survey with a questionnaire with a random sample of teachers was held online, and embraced mainly ICT knowledge and skills in primary and secondary schools. In the survey participated 201 teachers [18].

The results of the research mainly covered the area related to today's digital education, the application of digital educational content, the Internet in teaching. The research also included an insight into the possible equipment of technical and electronic devices in the school, such as computers, smart boards, projectors, tablets, printers and others.
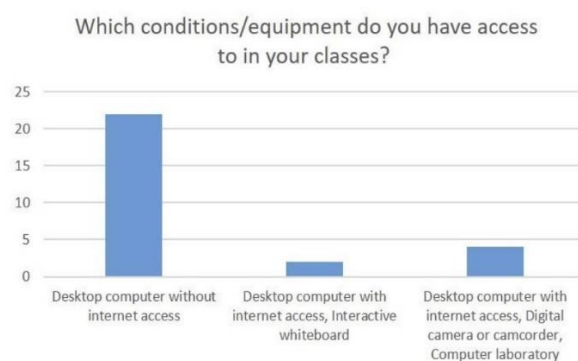

Fig. 1. ICT equipment in schools

From (Figure 1.) we can see that almost all teachers use computers and internet in all six countries for preparing lessons. Only 4% gave negative answer, which is a small number, but we have some teachers who never use computer or internet for preparing lessons [20].

We can see that results are different in all schools. In Sweden, Latvia and Romania teachers usedlaptops or tablet that are provided by school for them. In Croatia, Portugal and Greece the most of the teachers don'tused laptops or tablet that are provided by school for them.

Regarding on the use of digital devices, the possibility of additional education of teachers in the field of ICT were also mentioned. Most teachers regularly attend trainings and actively participate in seminars (Figure 2) [21].
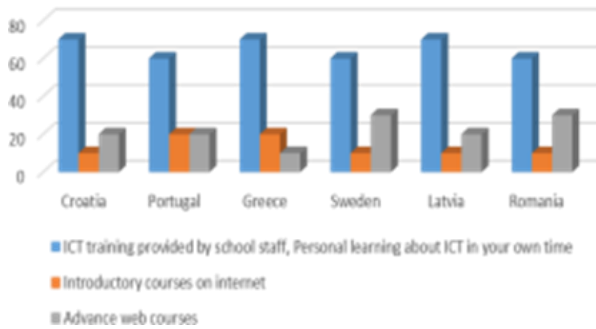
Fig. 2. Attend trainings

B. General questionnaires

The results of the research mainly covered the area related to today's digital education, the application of digital educational content, the Internet in learning like doing homework. The results from the line diagram show that the values how often do students use computers, tablets, and the Internet in class. And does schools provide students with laptops, computer, tablets for their own use we can see from (Figure 3).
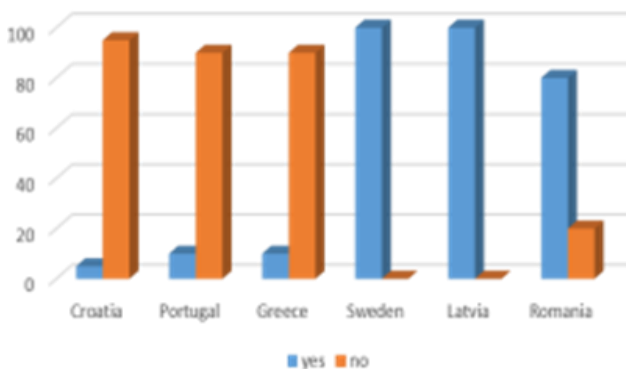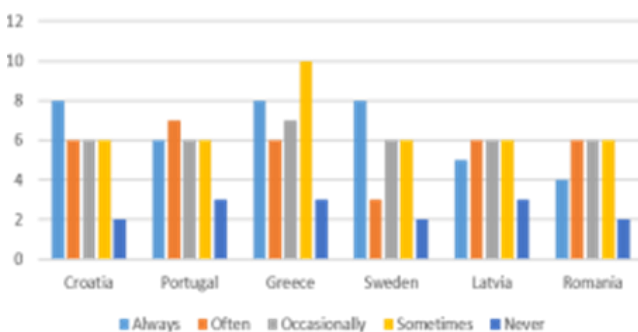

Fig. 3. Students and ICT use

Fig. 4. Internet search for information

That most of students in Croatia, Sweden and Greece participate in online communities or forums related to subjects they study, and that most of students in all of countries occasionally or sometimes participate in online learning by using Instant Messenger, Facebook to contact other students about school work. Most of them use this tool occasionally or sometimes [21]. Most of students are allowed to use in class tablets and notebook for teaching and learning (Figure 4.) [21].
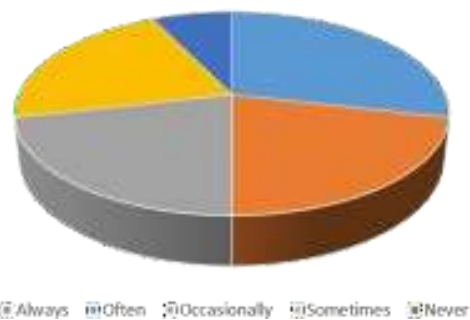

Fig. 5. Computers in teaching

From (Figure 4.) we can also see how often students use devices at school for learning in Greece, Croatia, Latvia, Portugal, Romania and Sweden.

From (Figure 5.) we can see how often students use the Internet to search for information for school work in Greece, Croatia, Latvia, Portugal, Romania and Sweden. And from that we can see how often students visiting online communities or forums related to the subjects they study [21].

IV. CONCLUSION

Most teachers says that they use ICT for "browse/search the internet to collect information to prepare lessons"; "browse/search the internet"; "create your own digital learning materials for students" and "prepare exercises and tasks for students. In most of countries all classrooms are equipped with a PC with internet connection and projector to be used by the teacher. Every teacher and student have an email and internet account so that they can access it. Although we can see that there were some teachers who already use ICT in their practice [19].

Given that online cooperation between teachers and students is essential in interactive teaching. Students should have hardware and software support at home, but also in the school itself. The results of this research showed that in some countries that participated in the project, there is good cooperation between schools and students in terms of IT support (Sweden, Latvia, Romania), while in other countries this needs to be drastically improved (Croatia, Portugal, Greece).

The research showed that students often use tablets in class. Also, the Internet is mostly available to students, as well as educational tools that help them learn. Students use forums to exchange information and knowledge, and receive and send assignments and tasks to their teachers through the before mentioned tools. However, the research shows that part of the students in the studied countries still do not use the Internet or educational tools to a satisfactory extent (Portugal, Greece, but also Latvia). Not all students use social networks, forums, other aids in education; Namely, there will always be a part of students - even in the most developed and IT-equipped countries of the world - who simply have a certain aversion to technological possibilities, and who will always prefer to take a physical book and learn from it, take notes by hand and thus improve their knowledge. But now we have touched on a completely new topic for which there is no more room in the work conceived in this way.

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