DEVELOPMENT OF MULTIMEDIA TOOLS TO IMPROVE THE E-LEARNING PROGRAM: IMPLEMENTATION OF THE ADOBE CAPTIVATE PROGRAM IN THE MODERN TEACHING SYSTEM

Kristina JAUKOVIĆ JOCIĆ
Goran JOCIĆ
Darjan KARABAŠEVIĆ
Đorđe PUCAR
Ana VELJIĆ

Abstract: *In the modern education system, the place of multimedia tools plays a very important role in education. Interaction tools are widely used to motivate students to learn. Improving efficiency and effectiveness are certainly accompanying factors that accompany the integration of multimedia in the teaching process. E-learning today is the backbone of education and an introduction to the new digital age that brings with it novelties and creative approaches to the process of acquiring knowledge. With the development of information and communication systems in higher education, we come to a better functioning and more effective approach to e-learning in the form of an easier process of systematization of teaching. In this paper we will explain the importance of e-learning System, its implementation in modern education and the benefits and characteristics of different multimedia programs in order to mobilize the enthusiasm of students in learning. Using the example of the Adobe Captive program, we will present its basic functions and the implementation of lessons and interactive content in the daily curriculum.*
Keywords: *E-learning, ICT, education, adobe captivate, multimedia tools*

INTRODUCTION

E-learning as a separate form of teaching has brought with it numerous possibilities and options in the modern education system. Place and time are no longer key factors in the teaching system as it is a case with the traditional education system where the student must be in the classroom during schooling in order to acquire the necessary knowledge and pass their subject obligations.

In the last decade, the role of students in higher education and education in general has changed. From passive knowledge acquisition during traditional

classroom lectures, students now face digital learning where they are offered asynchronous work, both individually and in groups. Asynchronous work in an online environment provides students with the opportunity to combine education with work, family and other responsibilities. (Hrastinski, 2008).

E-learning system is designed to improve teaching and the process of acquiring knowledge in various forms. Interaction as a concept is the backbone of the e-learning System and represents a link between creativity and better implementation of knowledge in the teaching process. The use of multimedia tools in this process leads to visible progress in all areas of education.

Distance or online learning includes many segments characteristic of traditional forms of learning such as: sharing ideas, discussions and other ways of sharing information and accumulating knowledge. (Rasthy, 2003.)

Multimedia tools used in all e-platforms for the task have easier interpretation and more efficient transfer of information and knowledge to existing users. Through Adobe Captivate, users can enjoy the many features that this program offers such as PPTX, VR, responsive software features, etc.

Multimedia and networking technologies have significantly impacted on our daily activities, particularly in terms of how we learn. Nowadays, classroom teaching no longer simply relies on chalk and blackboard as the prime medium for course dissemination. E-learning technologies have made it possible to provide a virtual classroom environment on the Web through supporting teacher-student and student-student communications, course material distribution as well as online student assessments. (Lau, Yen, Li, 2014)

ICT AND ROLE OF E-LEARNING SYSTEM IN THE MODERN EDUCATION SYSTEM

The role of information and communication technologies is becoming increasingly important in all aspects of life (education, work, entertainment, health, etc.). Competence in the field of ICT implies the acquisition of the necessary skills during education. ICTs play a significant role in information processing and their transformation into knowledge, which is a basic condition for citizens to become effective participants in the information society. (Grimus, 2007)

Today, ICT (especially the Internet) plays a very important role in the process of integrating technology into educational activities. The importance of ICT is: student-centered learning, support for knowledge building (learning constructivism), motivation to learn, developing higher-level thinking skills and developing problem-solving attitudes. (Kaware, Sain, 2015). In addition, numerous studies have shown that ICT can

significantly improve outcomes in education and the educational process. (Barak, Usher, 2019; Barak et al., 2016; Wang et al., 2015).

Information and communication technologies undoubtedly provide a positive impact on the learning process and student work, at a time when they become a key integrative element both in the classroom and in teaching. The availability of visual digital technology (animations, simulations and moving images) involves students and enhances conceptual understanding. The use of ICT also encourages development from a teacher-centered model to a more student-centered model in which students work as a team, make their own decisions and actively participate in learning. (Bennett & Dunne, 1991)

On the other hand, greater availability of ICT is especially useful for students suffering from learning difficulties, because the use of ICT allows teachers to prepare more efficiently appropriate tasks according to the individual needs of each individual. (Davis, 2000).

It is undeniable that information and communication technologies have fundamentally changed traditional approaches to learning and represent a new challenge for the educational community, a challenge that arises together with new environments and modalities of learning and acquiring knowledge.

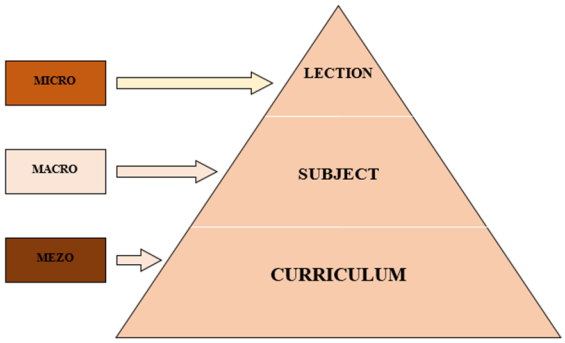

Figure 1. Areas of integration of information and communication technologies
Source: Wang & Woo (2007)

There is a huge potential for students to use the power of information and communication technologies in the teaching process and to improve the quality of teaching and learning. (Lawrence & Tar, 2018) However, it is reasonable to say that the simple introduction of ICT in education does not guarantee its successful integration if the teaching staff does not have the competencies regarding the application of ICT as well as the attitudes necessary for integration into the teaching process. Technology alone cannot bring about change in education, the impact on education can only happen through people who use that technology. (Wang & Dostál, 2017).

Research has shown that online education can be just as effective as traditional education, and in some cases, it has even been shown to be better. (Sachar, Neumann, 2010; Chao et al., 2010) The number of online courses is evidently growing, which has inevitably led to the question of the quality of these courses. In other words, are the offered courses able to provide their users or participants with the expected or required level of knowledge? In order to ensure the quality of their users and participants, many institutions and organizers of such courses have adopted appropriate principles and standards, all in order to achieve a satisfactory level of quality of education offered.

THE ROLE OF MULTIMEDIA TOOLS IN THE E-LEARNING EDUCATION SYSTEM

In today's age, all data and information are spread all over the world through the internet/web, so that everyone can easily access all the desired data and information. In addition to E-Learning, which bridges boundaries in the delivery of direct learning, learning media is also needed to facilitate the learning process itself. (Dewanti, Rusli, 2019)

In the modern era of information, everything is available to everyone in any form. In addition to the effectiveness of e-learning courses that aim to connect users with the process of learning information, multimedia tools serve as a tool through which users learn the curriculum better and more efficiently than in a traditional learning system.

An increasing interest in this area is the study of the application of modern technologies, in particular, e-learning courses (ESC) to improve efficiency and optimize learning. In the world and national theory and practice of education, considerable experience in the organization and implementation of training has been accumulated. Based on the use of computer-based training programs, this experience confirms the relevance of this topic. (Nazarova, Pulekha, Maslennikova, Osipov, 2020)

Through various varieties of multimedia programs, users of e-learning courses adopt information in the most creative way possible. For example, by using the adobe captivate program, course administrators are able to offer their users teaching material in a fully interactive form.

Using adobe captivate, the multimedia creator has the ability to publish online courses in multiple devices such as Desktops, iPads, and mobile devices. Adobe captivates can now publish to various formats such as HTML, SWF, Video, Executable, App, Adobe Connect and Captivate Prime. In this research, the multimedia module is published into devices

(App). Based on the output format, then the budgets and timelines would be specified. (Prayoga, Rusli, 2019)

The question arises about the possibilities and academic preferences of the course administrator. In what way and in what form can the teaching staff prepare and process each lesson for their student? There are numerous studies dealing with this topic, and all come to the conclusion that the issue of effectiveness and time management of course is an important factor and that the experience of an administrator is one of the key element.

The researcher used Adobe Captivate to design and deploy an application that rendered regular lesson plan activities into an interactive experience. In the context of the research, the application needed five hours to be fully functional and about two for testing and debugging. Therefore, seven hours were assigned for what can be deemed as a simple program. This time would have been considerably more costly if the application was developed by a programmer, raising the question of whether a teacher can design these applications. (Boukhechba, Bouhania, 2019)

The picture changes dramatically when referring to a classroom. Although teachers are explicitly instructed to use technology, at least in the Algerian educational system, and provide rich e-learning content to learners, the questions raised are the same ones fueling the current research:

- On what theoretical ground should technology be incorporated in EFL classrooms?
- What are the elements that constitute a technology-enriched curriculum?
- What are the advantages and limitations of adapting instructional design principles?
- Who should design E-learning content that are going to be presented to learners? (Boukhechba, Bouhania, 2019)

Research has shown various shortcomings and difficulties in the implementation of multimedia tools by amateur users, but with increasing awareness and training of various information-technological natures, many users of the e-learning System are achieving better results. In the following figure, we will see the simple interface of the Adobe Captivate program, which offers numerous possibilities to users.

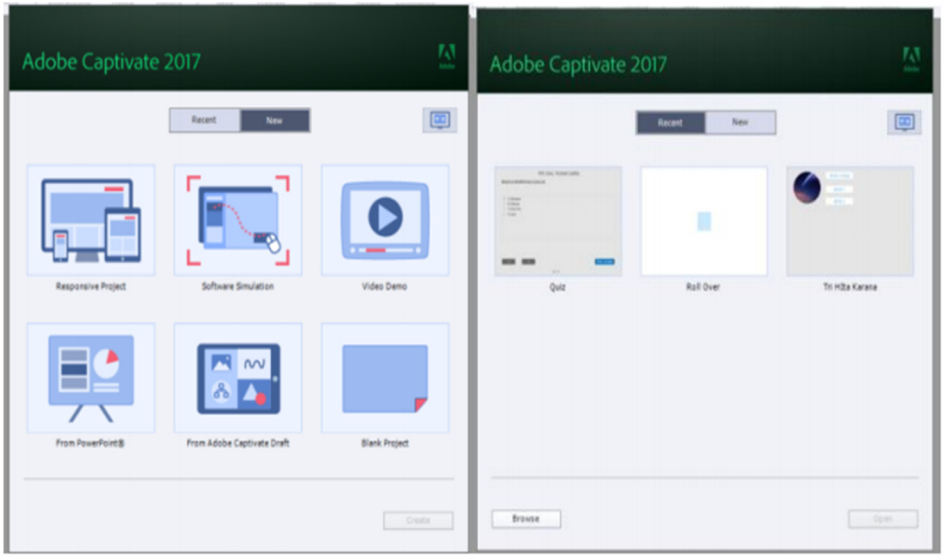

Figure 2. Creating a new project in Adobe Captivate
Source: Dewanti & Rusli (2019)

Evaluation of technology does not always need to occur after technology has been implemented. Rather, some aspects of technology should be evaluated prior to technology being implemented within the classroom. Exposure to the technology tools should occur prior to implementation to allow for the creation of technology goals, an understanding of how the technology works, and how it will be utilized within the classroom. If these aspects are addressed, and the teacher understands how to operate the technology, it may be implemented more frequently within the classroom (Mariola, 2012). In addition to these aspects, another level of evaluation should be focused on:

1. the infrastructure of the technology usage to include security of the technology tools,
2. possible technical support including trainings,
3. troubleshooting assistance that will be needed, and
4. the ability to keep the technology in working condition (Mariola 2012; Meeks, 2012)

CONCLUSION

The emergence of information and communication systems education has greatly facilitated the flow of information and the spread of knowledge of all kinds. By upgrading the characteristics of the ICT System, the idea of e-learning process of teaching appeared and this started a new era of information dissemination through interactive processes in teaching. Today, e-learning is the backbone of knowledge transfer and reaches the levels of communication between users, which result in a new level of teaching process, easier accumulation of knowledge and greater motivation to work. Due to the expansion of the need for online learning, the implementation of multimedia in all learning processes has resulted in a better system of receiving information. By using the multimedia tool, users are able to follow the lessons through all platforms available to them, from any location and at any time. Multimedia allows users a better insight into the teaching material in a more innovative and creative way than the system of traditional teaching, and thus we get the result faster and more effectively than in the previous era of education.

This paper covered the basics of the Adobe Captivate program itself, which shows that if the administrator of his courses masters the initial knowledge of this program, he will be able to transfer teaching materials to his students in an innovative form and in an easy way.

References

Barak, M., & Usher, M. (2019). The innovation profile of nanotechnology team projects of face-to-face and online learners. Computers & Education, vol. 137, pp. 1-11

Barak, M., Watted, A., & Haick, H. (2016). Motivation to learn in massive open online courses: Examining aspects of language and social engagement. Computers & Education, vol. 94, pp. 49-60

Bennett, N., & Dunne, E. (1991). The nature and quality of talk in co-operative classroom groups. Learning and Instruction, vol. 1, pp. 103-118

Boukhechba, H., Bouhania, B. (2019). Adaptation of Instructional Design to Promote Learning in Traditional EFL Classrooms: Adobe Captivate for E-Learning Content, International Journal of Education and Development using Information and Communication Technology, vol. 15, pp. 151-164

Chao, I. T., Saj, T., & Hamilton, D. (2010). Using collaborative course development to achieve online course quality standards. The International Review of Research in Open and Distributed Learning, vol. 11(3), pp. 106-126

Davis, N. (2000). International Contrasts of Information Technology in Teacher Education: multiple perspectives on change. Journal of Information Techology for Teacher Education, vol. 9(2), pp. 139-148

Dewanti, P., Rusli, M. (2019). Implementing Adobe Captivate in Designing ELearning's Digital Content, International Journal of Computer Applications, vol. 177, pp. 25

Grimus, M. (2007). ICT and Creative Computing, Austrian Perspective in Teacher Education. In: Educational technology: opportunities and challenges, pp. 86-104

Hrastinski, S. (2008). Asynchronous and synchronous e-learning. Educause quarterly, vol. 31, pp.51-55

Lau, R.W.H., Yen, N.Y., Li, F. (2014). Recent development in multimedia e-learning technologies. World Wide Web, vol. 17, pp. 189–198

Lawrence, J. E., & Tar, U. A. (2018). Factors that influence teachers' adoption and integration of ICT in teaching/learning process. Educational Media International, vol. 55(1), pp. 79-105.

Mariola, M. (2012). Evaluating technology for the classroom. School Planning and Management, vol.51, pp. 62.

Meeks., G. (2012). Is IT a help or a hindrance? Understanding expectations. School Planning and Management, vol. 51,pp. 63.

Nazarova, O.B., Pulekha, I.R., Maslennikova, O., Osipov, V. (2020). Rationale for choosing the model and tool for developing an e-learning course, Journal of Physics: Conference Series, International Conference on Information Technology in Business and Industry (ITBI 2020) 6-8 April 2020, Novosibirsk, Russia, vol.1661, pp. 2

Prayoga, I.G.P.A., Rusli, M. (2019). Implementation of Adobe Captivate Program in Developing Multimedia Module for Alas Kedaton Monkey Forest Bali. International Journal of Physical Sciences and Engineering, vol. 3, pp. 44

Rashty, D. (2003). Traditional learning vs. e-learning, PDF online accessed: http://www.click4it.org/images/f/f5/Traditional_Learning_vs_eLearning.pdf

Sachar, M., & Neumann, Y. (2010). Twenty years of research on the academic performance differences between traditional and distance learning: Summative meta-analysis and trend examination. MERLOT Journal of Online Learning and Teaching, vol. 6(2), pp. 318-334.

Wang, B. T., Teng, C. W., & Chen, H. T. (2015). Using iPad to facilitate English vocabulary learning. International Journal of Information and Education Technology, vol. 5, pp. 100-104.

Wang, Q., & Woo, H. L. (2007). Systematic planning for ICT integration in topic learning. Journal of Educational Technology & Society, vol. 10(1), pp. 148-156

Wang, X., & Dostál, J. (2017). An analysis of the integration of ICT in education from the perspective of teachers' attitudes. Proceedings of EDULEARN17 Conference 3rd-5th July 2017, Barcelona, Spain

NOTES ON THE AUTHORS

Kristina JAUKOVIĆ JOCIĆ, Ph.D. is an Assistant Professor at the Faculty of Applied Management, Economics and Finance, University Business Academy in Novi Sad. E-mail. kristina.jaukovic@mef.edu.rs

Goran JOCIĆ, MsC., is an Teaching Assistant at the Faculty of Applied Management, Economics and Finance, University Business Academy in Novi Sad, Serbia. E-mail: goran.jocic@mef.edu.rs.

Darjan KARABAŠEVIĆ, Ph.D. is a Vice-dean for Scientific Research and an Associate Professor of Management and Informatics at the Faculty of Applied Management, Economics and Finance, University Business Academy in Novi Sad, Serbia. E-mail. darjan.karabasevic@mef.edu.rs

Đorđe PUCAR, BSC, is an Teaching Associate at the Faculty of Applied Management, Economics and Finance, University Business Academy in Novi Sad. E-mail. djordje.pucar@mef.edu.rs

Ana VELJIĆ, is a demonstrator in teaching at the Faculty of Applied Management, Economics and Finance, University Business Academy in Novi Sad. E-mail. ana.veljic@mef.edu.rs