Blended Learning in Slovenian Higher Education

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Abstract

The digital transformation of higher education is rapidly progressing as a response to the Covid-19 epidemic and is affecting every higher education institution to reorganize the educational process. In the paper, we provide a review of ICT implementation in the educational process, a conceptual definition of blended learning, and an analysis of several relevant documents to gain more insight into the current state of e-learning and blended learning implementations at higher education institutions in Slovenia. We find that terminology used related to e-learning (and blended learning) is diverse, the understanding is not unified, and there is also no uniform use of individual terms. From the quality point of view, implementing e-learning into the study process requires teachers' judgement when

and how it makes sense to use ICT, otherwise, no added value is given to the improvement and promotion of the development of higher cognitive processes.

INTRODUCTION

With the closure of public life, the covid-19 epidemic (pandemic) forced many educational organizations to implement distance learning in their learning implementation. According to Johnson et al. (2020) in March 2020, 850 million individuals acquired knowledge outside of traditional classrooms. The authors state that the response to the epidemic was similar to crisis situations that have occurred in the past, such as Hurricane Katrina in 2005 and the New Zealand earthquake in 2011, which caused a similar situation, albeit in a narrower geographic area. Emergency situations require a quick and unplanned response, which is why the term "emergency remote teaching" has been used in the English-speaking environment. In Slovenia, we talked about distance learning or learning from home, or crisis teaching (Florjančič, 2021). Responses during the Covid-19 in Slovenia did not differ from the rest of the world, when Higher education institutions restricted access to their facilities, leaving students with on-line learning options. Blended learning was embraced also after the Covid-19 epidemic. The need for integrated and systematic approach to blended learning implementation at institutional, programme and course level is still needed.

The experience with the pandemic highlighted the necessity of digitization and the introduction of innovative work approaches in the field of education as well, since an effective digitally supported education system is the foundation for an agile response to rapid changes in society. The digital transformation of education is one of the strategic goals at the level of the whole of Europe as well as of Slovenia. The digital transformation of education can only be achieved by using new pedagogical strategies and learning approaches in direct practice. At the same time, the digitization of education should be recognized as an opportunity to improve the quality of the pedagogical process and the entire educational system. Every introduction of a new technologically advanced approach requires the renovation of the already existing pedagogical system or process. The digitization of education is reflected in many forms/implementation versions of technology-supported education (OECD, 2020).

This paper aims to provide a snapshot of blended learning practices in Slovenian higher education in last two years, and at the same time offers a critical review of the relevant literature on e-learning and blended learning and its integration in the educational setting.

Our main research question is *What forms of e-learning and blended learning implementations exist in higher education institutions?*

We provided a short literature review on blended learning framework and a qualitative analysis of public documents that include blended learning practices in Slovenian Higher education institutions.

METHODOLOGY

We based our analyses on qualitative methodology and content analysis. Other research did not consider the analysis of Self-evaluation reports (at an institutional level) and Call for Applications for Undergraduate and Integrated Master's Degree Programs for the academic year 2022/2023 (hereinafter the Call). In the last five years, several empirical studies have revisited the use of ICT in the Slovenian higher education system. In this study we performed two analysis of e-learning and blended learning from other perspectives, such as:

- Analysis of the content of the Call, which among others, focuses on the way educational activities are delivered, including e-learning or blended learning implementation.
- Analysis of the contents of Self-Evaluation Reports of six selected higher education institutions for the academic year 2021/2022 and the business year 2021 at selected higher education institutions to determine the inclusion of e-learning elements in educational activities from the perspective of quality management, quality indicators, measures and plans for implementing and ensuring the quality of higher education.

Therefore, our approach allows two different perspectives as our main contribution to the blended learning practices in Slovenia. Self-evaluation reports were selected based on the criteria: 5 public and 2 private higher education institutions that are geographically dispersed across country.

IMPLEMENTING ICT IN THE EDUCATIONAL PROCESS

Educational institutions are expected to increasingly enable and ensure flexibility and individualization, so that learners have the opportunity to adapt the learning process to their own needs and specific life stages (Barnett, 2014) and to enable them to take more responsibility for their own learning (Wade and Moore, 1994). The central part of "flexible learning" enables learners to adapt the learning process to their own needs, thereby gaining the opportunity to decide for themselves what, when, how and where they learn. To a large extent, the temporal and spatial flexibility of learning is successfully achieved precisely through the use of information and communication technology (ICT) and didactic implementation in various forms of e-learning. Of course, this also raises questions, such as how to enrich learning in the classroom with the expedient use of ICT and enable greater flexibility of the learning process without negatively affecting its quality.

Education is an organized process of acquiring knowledge and developing competencies, which includes (Bregar et al., 2022):

- an organization that takes care of the planning, organization, implementation and evaluation of the entire educational process;
- teachers who plan, organize, implement and evaluate the learning unit (teaching);
- learners who, through their activity, acquire, demonstrate and reflect on the process of acquiring knowledge.

We must be aware that the learner also acquires knowledge outside the organized educational process, e.g. through self-education. Assuming that learning can take place anywhere, anytime and in any way,

it is necessary to be aware that even in an organized educational process, learning takes place in a physical (lecture room, classroom, field or elsewhere) and online environment. Learning in the physical environment takes place synchronously, i.e. with the simultaneous presence of participants in the educational process (learner and learner). In the online environment, learning can take place both synchronously and asynchronously. The latter means that the participants of the educational process are not simultaneously present in the common online environment. Each of the methods of implementing the educational process has certain advantages and disadvantages, but in practice they are often combined and supplemented.

Since pedagogical approaches are changing at the same time as the rapid development of digital technologies, new innovative methods and new forms of work are being introduced (e.g. flipped learning), new terms are appearing that are often used differently, but most authors still refer to the standard, which was already established in 2007 and is presented in Table 1. It is necessary to keep in mind the fact that nowadays the education process rarely takes place completely without the use of any technology (e.g. at least using ppt slides, use of online resources, etc.) (Sulčič, 2008; Allen et al., 2007).

Table 1: Presentation of different forms of education, from traditional to online education

Proportion of program delivered online	Form of education	Typical description
0 %	*Traditional form*	Education is carried out without the use of ICT, contents are given orally or in writing.
1–29 %	*Web facilitated form*	The education takes place live, the contents are accessible online, as well as some assignments.
30–79 %	*Blended and Hybrid education*	The educational process combines live meetings and online activities (e.g. forums).
> 80 %	*Online*	Most or all of the program is conducted online, in a chosen learning environment. Generally, no live (or F2F) meetings.

Adapted from Allen et al. (2007).

"In general, educators in Europe agree that the teacher-centred educational paradigm has survived and that it is time to be replaced by the so-called student-centred paradigm. There is an increasing awareness that the population of learners is heterogeneous, with different prior knowledge, motivations and interests in education, different generations, and their educational needs and expectations differ. The educational process or the learning process must be designed and carried out in such a way that the learner is an active creator of knowledge and new abilities, and the teacher is a guide and moderator in this process. The leading concepts that support the implementation of this educational paradigm are personalization of learning and flexible learning, creative learning, active, independent and authentic learning, collaborative and open learning, ubiquitous learning. To introduce these concepts into education, a series of methods and approaches are available today, which are mainly based on the technological achievements of the last decade." (Bregar et al., 2020, p. 2).

There is therefore a tendency to focus more on the point of learning than of teaching, whereby learning is the activity of the learner, teachers and the organization help him in this. This does not mean that the role of the teacher has decreased or become less responsible compared to the past, but it is definitely different. A teacher needs different skills and knowledge to successfully incorporate technology into teaching. The TPACK (Technological Pedagogical Content Knowledge) model includes, in addition to knowledge of content and pedagogy, a technological component of knowledge, and their interactions are shown in the model Picture 1. The teacher is the one who, in order to achieve the set goals (assimilation of knowledge, development of competences, attitudes...) plans the learning process and in doing so thoughtfully combines content, different pedagogical approaches and uses learning resources (e.g. information and communication technology) (Mishra and Koehler, 2006).

Picture 1: Model TPACK
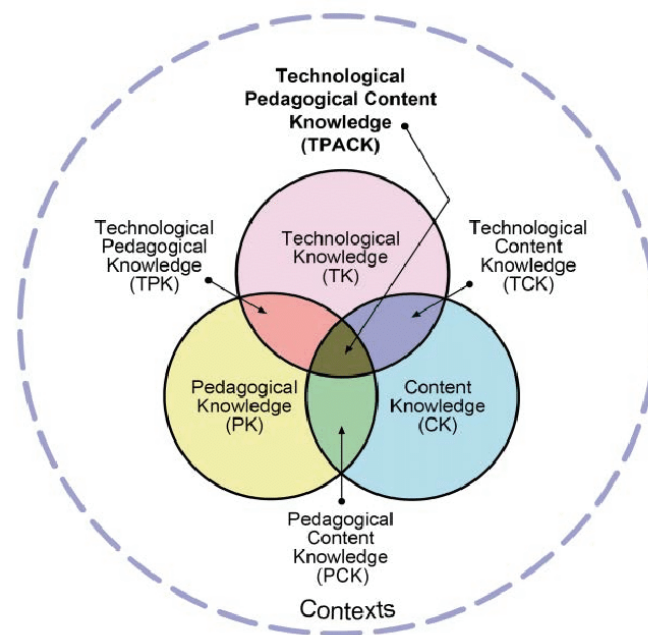
Adapted from Koehler and Mishra (2009).

Thinking about the meaningful use of technology in the process of teaching and learning with an emphasis on the learner is even more important, as it must not remain only a means of communication at a distance, showing/illustrating certain phenomena and processes or encouragement, but must support learning process and the active role of the learner. When judging the meaningful use of technology in the educational process, it is expedient to use the SAMR model, as shown in Picture 2. The teacher must be able to make a clear decision when it makes sense to use information and communication technology in order to improve the quality of the learning process. Otherwise, it is only a matter of replacing the traditional form of performance of the activity, with no added value to the improvement and progression of the development of higher cognitive processes (Jedrinović et al., 2018).

Picture 2: SAMR model
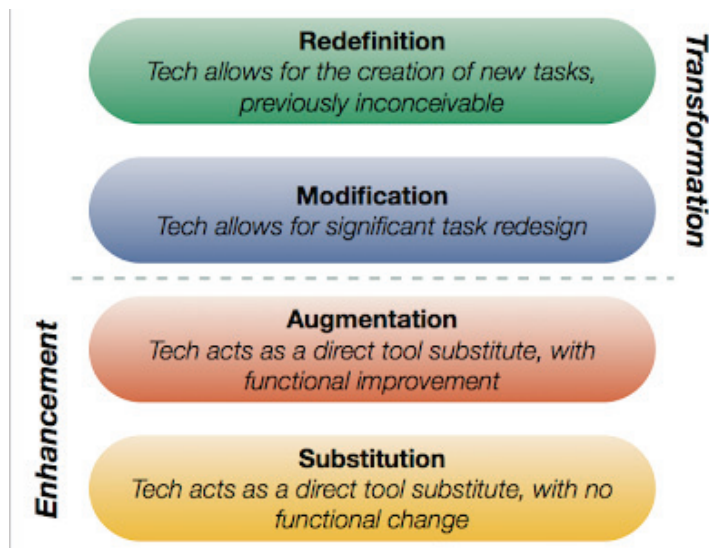
Adapted from Puentedura (2006).

BLENDED LEARNING IN HIGHER EDUCATION

In general, researchers define the blended learning model as a learning environment in which a combination of traditional learning and e-learning takes place, where e-learning does not replace traditional education (Graham and Dziuban, 2008). The Association of European Universities (Gaebel et al., 2021) defines it as a combination of traditional classroom teaching with the innovative addition of ICT activities. The innovative use of ICT includes videos, e-knowledge tests, podcasts and other interactive and multimedia materials that can be accessed by education participants regardless of time and space. By using the mentioned ICT tools, the participants complete the adopted content of the lectures through independent work outside the lecture hall or classroom (Graham et al., 2014).

Picture 3: Blended learning
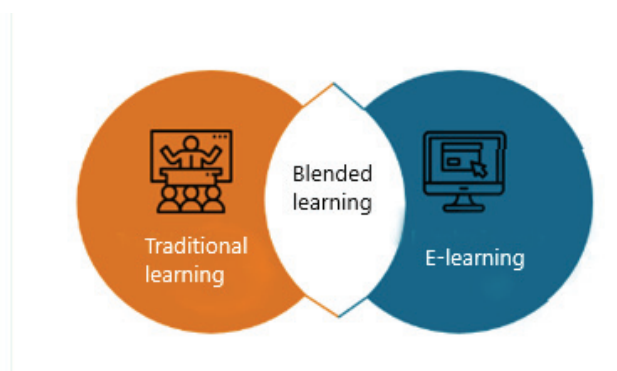
Source Didakt.UM, 2019.

Hrastinski (2019) notes that the most commonly used definitions of blended learning are: "blended learning systems that combine traditional teaching with technology-mediated teaching... (Graham 2006, p. 5)" and Garrison and Kanuka (2004), who define blended learning as "the thoughtful integration of traditional face-to-face classroom learning experiences with online learning experiences".

Blended learning includes different forms (Bates, 2022):

- the use of a learning management system (LMS) to support teaching in the classroom, namely for the storage of learning materials, publication of the schedule, online discussion and for the submission of assignments, but despite this, teaching is still mainly carried out in a physical environment;
- use of flipped classrooms, through which students watch the lecture via streaming video, and then physically participate in the discussion or other work in the lecture hall or classroom;
- alternating or parallel modes, e.g. part of the semester the educational process is carried out in an online environment, and part of the semester in a physical environment;
- hybrid or flexible learning, which is based on the adaptation of the educational process so that it is mostly carried out in an online learning environment, with the exception of laboratory or other practical exercises, which cannot be carried out with high quality in such a learning environment;
- hyflex learning enables learners to choose the way of involvement in the educational process (synchronously or asynchronously in a physical or online learning environment) that suits their needs and desires, and in the end, everyone must achieve the set learning goals.

Slovenian Quality Assurance Agency (2022, p. 38) differentiates between blended learning and hybrid learning by recognizing that both types contain elements of online and face-to-face education. The difference is in the organization of studies, where in the case of the hybrid model students are not necessary present at the location of the (physical) implementation but can participate at a distance. While the blended learning model is used as a complementary and not a substitute form of face-to-face education. Blended learning is carried out linearly (sequentially), where everyone performs part of the duties at facilities and part of the duties in a virtual environment. Hybrid learning is carried out in parallel, regardless of the location of the students, since the students themselves decide on the form of cooperation. In hybrid learning, students must be guaranteed an equivalent experience, the achievement of the same goals and the competences and learning outcomes set by the study program.

Thus, blended learning in higher education is education in which different pedagogical approaches are combined and meaningfully complemented in different learning environments. The process of acquiring knowledge takes place in a physical learning environment (classrooms, lecture halls, laboratories, field work, excursions, company visits) and remotely in various online learning environments, with an emphasis on providing the same quality learning experience in both learning environments. Connecting and supplementing different environments into a common high-quality learning experience is only possible with meaningful support and the use of modern digital (learning) technologies. Combining and complementing learning environments depends on the field of study, learning outcomes and spatial, personnel and technical-technological possibilities.

RESULTS

According to the analysis of the Call, the following phrases appear: "online", "the study is conducted as blended learning (partly in lecture rooms, partly online)", "the study is conducted as blended learning (e-lectures, e-exercises)", "e-study", "study with information support", "e-study at a distance", "e-learning in a certain proportion", "study at a distance".

According to the Call, there is no systematic usage and inclusion of e-learning in the study process, as these options are only mentioned in individual higher education institutions which does not mean that

other institutions do not use ICT technology in educational process. We can also find that the terminology used related to e-learning is diverse and there is no unified understanding of the use of individual concepts. The question arises as to whether the mode of study is an information that in the future would be reasonable to include in the Call and thereby present students with the advantages of individual study programs, e.g. in connection with the possibility of distance learning, study support using e-classrooms, etc.

From the analysis of the Self-evaluation reports of the selected higher education institutions for the academic year 2021/2022 (and the financial year 2021), for educational activity, "distance education" is mentioned and other terms used are "online" implementation, "e -study", "hybrid learning", "simulations" and "virtual meetings".

Higher education institutions mention the increased need for information support and the increase in the use of ICT tools, which include various software solutions or video conference systems or LMS (MS Teams, Moodle, Zoom, Blackboard Learn, Camtasia, Ebook creator, Exam.net). They have implemented elements of distance education in each of their own ways. The findings further confirm that there is a need for standardisations at the system and normative level to integrate blended learning approach consistently and systematically into the educational context.

All higher education institutions in this analysis have a supported learning environment with various ICT elements. We note that those institutions of higher education, which were already implementing various forms of blended and/or distance learning before the Covid-19, got through the epidemic period more easily and gained the opportunity to upgrade and advance their ICT systems. Given the current situation, the challenge remains how to properly connect the individual elements of ICT support and integrate them into the main learning environment as one system and not only partial solutions.

CONCLUSION

The analysis of digitization and blended learning implementation in higher education in Slovenia brings new insights. Our results show that the terminology used related to e-learning (and blended learning) is diverse, the understanding is not unified, and there is also no uniform use of individual terms. Understanding and use of terminology in the field of e-learning is still inconsistent. Inconsistency in the understanding of terminology leads to inadequate use of e-learning in educational programs, confusion in professional discussions, and also into failure when trying to introduce e-learning into practice. This problem is also in line with other research (Florjančič, 2021).

From the quality point of view, implementing e-learning into the study process requires teachers' judgement when and how it makes sense to use ICT. Otherwise, it is only a matter of replacing the traditional form of performance of the activity, with no added value to the improvement and stimulation of the development of students' higher cognitive processes.

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