THE POSSIBILITIES OF USING BLENDED LEARNING IN FIRE SAFETY EDUCATION

Jozefína Drotárová¹, Danica Kačíková², Miroslav Kelemen³, Mikuláš Bodor⁴

Abstract: E-learning is way of providing, rapid and adequate response for training in legislative changes and requirements. This is vital, because such changes are frequent in safety education and specifically fire-safety education. It is an enormous burden for schools and training centers to provide all such learning. Money, time saving, and simplification are the main reason to use a “blended” learning. This paper characterizes the advantages and disadvantages of education through the Internet. It deals with the possibilities and ways of using a blended learning approach in selected forms of fire-safety education.

UDC Classification: 001, 004, 5, 37, **DOI:** <http://dx.doi.org/10.12955/cbup.v4.769>

Keywords: Blended learning, Fire Safety Education, possibilities and ways of using Blended learning.

Introduction

Today, it is very common to include electronical education in high school and university curricula of all types. Blended learning- which includes electronical education, is not only acceptable, but much favored by students. The students of today accept new technology rapidly, and easily learn how to use it. (Hubackova-Semradova, 2016) Teachers use E-learning for delivering their subjects, setting exams and communicating with study groups. This type of education could be integrated into the fire-safety courses at training centres.

Electronical Education

In recent years, a series of terms has emerged to define and name on-line education for example distance and continuous learning, Web Based Training- (WBT), Web Based Learning-(WBL), E-learning, Learning Management System-(LMS), Learning Content Management System- (LCMS), virtual university, integrated learning system, Virtual Learning Environment-(VLE), Managed Learning Environment- (MLE), and blended learning (BL). Considered the newest and most efficient form of education, blended learning (BL) is based on new information and technology communication (ITC). It represents a type of blended training in which the traditional ways of training (face-to-face) are combined with those that use new ITC (Garrison & Vaughan, 2008 in Tausean-Tumasila, 2014).

Blended Learning

According to Kaur (2013) “Blended Learning is provided by the effective combination of different modes of delivery, models of teaching and styles of learning, which are exercised in an interactively meaningful learning environment (p. 612)

According to the Web Glossary (n. d.):

The term blended learning is generally applied to the practice of using both online and in face-to-face learning experiences to teach students. In a blended-learning course, for example, students might attend a class taught by a teacher in a traditional classroom setting, while independently completing online components of the course outside of the classroom. In this case, in-class time may be either replaced or supplemented by online learning experience, and students would learn

¹ Jozefína Drotárová, Department of Forensics and Fire Protection, The University of Security Management in Košice, Slovakia, and PhD. Student at Department of Fire Protection, Faculty of Wood Science and Technology, Technical University in Zvolen, Slovakia, jozefina.drotarova@vsbm.sk

² Danica Kačíková, Department of Fire Protection, Faculty of Wood Science and Technology Technical University in Zvolen, Slovakia, danica.kacikova@tuzvo.sk

³ Miroslav Kelemen, Department of Security Management, University of Security Management in Košice, Slovakia, miroslav.keleme@vsbm.sk

⁴ Mikuláš Bodor, Department of Law and Crime Prevention, University of Security Management in Košice, Slovakia, and PhD. Student at Department of Fire Protection, Faculty of Wood Science and Technology, Technical University in Zvolen, Slovakia, mikulas.bodor@vsbm.sk

about the same topics online as they do in class i.e., the online and in-person learning experience would parallel and complement one another.

“Blended learning provides a number of important advantages for both teachers and students, making them active participants of the learning process responsible for the results of their own work.” (Buran-Evseeva, 2015, p.181)

Hubackova-Semradova (2016) claimed “Success of Blended learning depends not only on the quality of the course and the virtual environment, but also on the grade to which the students are prepared to work in their virtual study environment” (p.551)

Today, blended learning has a much wider application than just the study of theory. As reported by Klentien and Wannasawade, 2016 “There are possibilities of using blended learning even for laboratory exercises. Those tried to develop the Virtual laboratory, where students could test their hypothesis and observe the test results without risk of possible dangers from a real experiment or high cost and prepare themselves for an experiment in a real laboratory” (p.707)

Advantages of Blended Learning

Blended learning is a Blended learning is a form of education that offers students or course participants the “best of both worlds”, because instructors and students have increased flexibility and accessibility without sacrificing face-to-face contact. Blended learning presents a combination of advantages for contact teaching, using several constructive principles and advantages of the electronic teaching format.

Blended learning means optimizing education and training. An appropriate combination of theoretical training through E-learning together with practical training in the work environment can provide better training for course participants and more efficient scheduling. This is crucial in fire-safety education and preparation.

As reported by Cojocariu, (2014), there are also economic benefits. Since part of the course is individually completed by participants, it shortens the training period and this means lower costs for accommodation of trainers or participants in the training. In the case of the everyday commute to a training facility, it could also reduce the cost of fuel. Reduction in printing costs for tests, brochures, manuals, or for constantly changing legislation would result in significantly lower training costs as well as time savings.

Saving time has already been mentioned several times. E-learning would shorten training or allow enough scope for developing practical exercises, physical training, and modelling.

Online courses offer the possibility to update information immediately and without financial costs.

Another advantage is individualization of learning. The course participant can learn as quickly as they need to. There is no given time for learning (the E-learning part of the course). Hence, there is no need to learn specific material within a specified timeframe. The same applies for space.

It is very common to perform tests during E-learning course. The course participants can identify their weaknesses and deficiencies at any time. These tests are a part of the E-learning platform that can prepare students for their final exam.

Furthermore, there is time and space for answering student’s or participant’s questions in the face-to-face part of the learning. This includes sufficient scope for interpretation and presentation.

Disadvantages of Blended Learning

The disadvantages of blended learning include dependence on technology, e.g. computer and Internet connection, and the requirement of basic computer skills (Barešová, 2011).

Not every course participant prefers E-learning. Nevertheless, there are some potential participants who have no other opportunity but to perform the course through the Internet. The blended learning approach requires participants join in both parts of the course.

Insufficient learning within E-learning process is another disadvantage. Despite many possibilities of verifying E-learning’s content, it is not always possible to prepare for how theory is assimilated nor how tests are completed. Participants may display inconsistent, careless, automatic or click-through

responses without giving the topic deeper reflection, and may miss context, because of awareness or focusing on unimportant parts.

The Possibilities of Using Blended Learning in Fire Safety Education

For fire-safety education, theoretical and practical learning is specified and thus, blended and thus, blended learning is purposeful for this area.

There are some courses in the fire-safety education area in Slovakia, where it is possible to use blended learning, for example:

- The Fire Protection Technician;
- The Fire Prevention Officer;
- The Fire Protection Specialist;
- The basic preparation of members of Units of Fire Protection;
- The basic preparation of members of the municipal Voluntary Fire Services;
- The vocational training for specific functions, for example Commander;

Ways of Using Blended Learning

Blended learning could proceed in five ways (Figure 1), as follows:

1. The first part of the course involves face-to-face learning, which is followed by E-learning. The exam takes place in a classroom or training center.
2. The first part of the course is E-learning is followed by the face-to-face learning. The exam takes place in a classroom or training center.
3. The E-learning part and the face-to-face learning part are run in parallel. Then the exam takes place in a classroom or training center.
4. The fire safety course runs in the classroom, face-to-face, and participants use the E-learning only for doing their tests. The exam takes place in a classroom or training center.
5. The E-learning, the face-to-face learning, and online testing run in parallel. The final exam is performed online.

Figure 1: Five possible ways of using blended learning

Source: Authors

Conclusion

A main reason to use blended learning in fire-safety education and safety education in general is that these areas are affected by dynamic development and frequent changes. Schools, universities, and training centers are required to incorporate all changes to their syllabus, other materials, and tests. This requirement is extremely demanding on human resources, finances and use of time. Changes are enforceable by communication through computer. Networks, and hence the high school and the universities should integrate and use E-learning. For the exact same reason, blended learning could be used by training centers and facilities, concentrating on fire-safety education.

In addition, using E-learning provides many advantages for course participants who can study from any place, at any time, and save money in commuting, textbooks, and many other study materials. Participants can communicate with each other and the teacher and are provided with the opportunity to do their testing again and again, and to know their knowledge gaps.

There are various ways and possibilities of using E-learning for fire-safety education. At the present time, there are no possibilities of choosing between E-learning and standard ways of courses under Slovak law. For now, the E-learning course can only complement the traditional education, but legislative change is expected within the following years. The Technical University in Zvolen in partnership with the University of Security Management in Košice have prepared the first two E-learning courses of fire protection. These courses could also be used by the training centers as well as by course participants.

Acknowledgement

This contribution has been processed in undertaking the scientific project, IP44/VSBM/-2016” Creating an E-learning module “Basic Training of the members of Fire Units - Volunteer Fire Departments in Learning Management System (LMS).

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