WHAT BLENDED LEARNING PROVIDES WITH HIGHER EDUCATION AND PROFESSIONAL WORLD

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Abstract: The innovative learning environment based on emerging information and communication technologies has enabled the development of educational concept known as blended learning. The paper deals with blending learning environment that represents the balanced combination of traditional forms of learning supplemented and supported by adequate possibilities of information and communication technologies. The characteristics of blended learning models are presented generally and from the aspect of favour for higher education and corporate training/workplace environment.

Key words: blended learning, higher education, workplace environment

1. INTRODUCTION

A blended learning definitions presented in the literature have varied and no specific one is adopted. This fact is appropriately expressed by the conclusions of the expert review of blended learning proposals presented in [1]: “Our analysis convinces us that blended learning is a fully-fledged boundary object: a concept that holds a large community of practice together but lacks a common and precise definition. There was no prototype for blended learning. This appears to be both, a weakness and strength. The weakness comes from the fact that there is no common definition or model and therefore no unifying constructs in the proposals. On the other hand, this loose structure might facilitate out-of-the-box creative solutions”.

The definition of blended learning “as structured opportunities to learn, which use more than one learning or training method, inside or outside the classroom” [2], is based upon holistic approach. It includes different learning or instructional methods (lecture, discussion, guided practice, games, case study, simulation), different delivery methods (live classroom or computer mediated), different scheduling (synchronous or asynchronous) and different levels of guidance (individual, instructor or expert led, or group/social learning).

Blended learning is very often simply presented as the integration of traditional classroom face-to-face learning with online activities (termed e-learning) enabling the students the flexibility of online learning (time and place) as well as the benefits of structure and engagement out coming from in-person classroom teaching [3]. But the authors emphasize the fact that blended learning is not just the result of simple integration of the mentioned activities [4].

Similar to other definitions as regards the combination of the mentioned two components, but supplemented with the possibility of student control over learning process and the way of supervision, is the definition according to [5]. “Blended learning is a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace and at least in part at a supervised brick-and-mortar location away from home.” After preliminary definition from 2011, this definition represents a refined one which embraced the feedback from the field. The expression “formal education” was added to distinguish blended learning from informal online learning (educational video games playing by students at their own), “content and instruction” was added to distinguish online learning from the use of exclusively Internet tools.

Blended learning can be designed in many ways to meet many reasons; therefore it represents always the possibility of appropriate answer for specific demands. A well-designed blended learning model is balanced combination of the best pedagogical face-to-face classroom methods and computer mediated activities. The offered learning experience represents constantly the object of interest for the transformation and enhancement of learning effectiveness by entering recent technology-based instructional methods. In most cases some version of management system application is adopted to perform the online connection and communication within all persons engaged in the process.

In [6] there are identified four different concepts to perform the combination and achieve specific goal/outcome:

- The combination or mix of modes of web-based technology to accomplish an educational goal.
- The combination of various pedagogical approaches to produce an optimal learning outcome with or without instructional technology.
- The combination of any form of instructional technology with face-to-face lecturer led training.
in asynchronous learning, the reduced motivation and the avoiding the procrastination.

In [3] were identified six reasons that may foster the intended fostering of students’ interaction between students and lecturer, procrastination and difficulties for the absorption of large amount of materials can be noticed.

As emphasized in [3] individualism is always presented in face-to-face classroom learner-centered environment. In the case of group with high number of students live instruction and personal interaction lecturer-student and student-student is limited, regardless of technology used [8, 9, 3]. Four levels at which blends are performed were identified [3]: activity level, course level, program level, and institutional level. An instructional method of class discussion is given as the example of an activity level blend that put the emphasis on learner interaction rather than knowledge transmission. Some advantages and disadvantages of face-to-face and computer mediated learning listed in Tab. 1 can facilitate and direct the decision about the combination of two learning activities components to effectively fulfill the goals. The choice of blended components may depend on e.g. the number of students in the group, the intended fostering of students’ motivation and the avoiding the procrastination. E-learning environment means successful communication, interaction and multimedia input. As the disadvantages of exclusive usage, the lack of personal interaction between students and lecturer, procrastination in asynchronous learning, the reduced motivation and difficulties for the absorption of large amount of materials that online delivery makes possible, can be noticed. In [3] were identified six reasons that may foster the development of blended learning environment: pedagogical richness, access to knowledge, social interaction, personal agency, cost effectiveness and ease of revision. According to [10] primary reasons that make blended learning valuable approach are improved learning effectiveness, increased access and convenience, and greater cost effectiveness.

Blended learning occurs in novel environment characterized by the shift from lecturer-centered learning practice towards the student-centered learning and consequently improves the level of active learning strategies, peer-to-peer learning strategies and student centered strategies [11].

### Table 1. The comparison of face-to-face and computer-mediated learning environments [3]

<table>
<thead>
<tr>
<th></th>
<th>Computer-mediated environment (Asynchronous text-based discussion)</th>
<th>Face-to-face environment (In class discussion)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength</strong></td>
<td>Flexibility</td>
<td>Human Connection</td>
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<td>Participation</td>
<td>Spontaneity</td>
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<td>Depth of Reflection</td>
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<td><strong>Weakness</strong></td>
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<td>Procrastination</td>
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<td>Human Connection</td>
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<td>Participation</td>
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#### Fig.1. Good quality figure with clear lettering

In [12] a list of blended learning benefits outgoing from the combination of the best offered by both, e-learning and traditional education and based on the research results of UCLA (University of California, Los Angeles), is presented:

- class goals can easily be met,
- uniformed classes for multi-section offerings,
- redesigning courses so the educational outcome can be measured easily,
- effective use of class time,
- enhanced computer literacy among students and instructors,
- flexible classroom scheduling,
- increased chances for doing research,
- course documents are available to learner 24 hours a day,
- using the World Wide Web resources to support class activities,
students can participate at any time,
students can collaborate on their own time,
supply students with additional learning materials if they need them,
reduce the instructor’s redundant time,
increase the quality of communications between the instructor and learner,

- better ability to monitor students involvement and advancement,
- using interactive programs that produce quick feedback and an advice for any remedial work, and
- reduced rates of drop, fail and withdrawal.

3. BLENDED LEARNING MODEL

As no prototype for blended learning exists, the variation of ratio of time spent online to time spent in face to face classroom activities is sometimes utilised as criterion to characterise the blending. Another one may be the relative extent of integration of two components of blended learning. The results based on the works of the winners of grant competition through collaborative initiative Next Generation Learning Challenges (NGLC) [1], were expressed by putting together these two criteria for the evaluation of a blending (Fig.1). Each granteé’s work presented different blended learning model combining various amount of face-to-face and online activities. A 10 blended learning programs, tend to be grouped in the upper left quadrant i.e. tend to more face-to-face than online work, but with more than a minimum of classroom and online activities integration. The differences were noticed for projects in mathematics which utilised more online time than in person, and for the grantees concerned to provide support and training for other campuses whose projects therefore occupy more than one quadrant.

Some authors alert that blended course should be not viewed just through certain percentage of online and face-to-face instruction, but primarily as integrated and complementary learning with certain implementation of two environments advantages [1,11, 13].

The achievement of blended learning implementing benefits depends upon numerous factors and the knowledge about possible and recent models is therefore valuable [14, 15].

The course-redesign projects were performed at colleges and universities [15] that enabled firstly, to recognise common characteristics that the projects share at different degrees, and secondly, to identify five distinct course-redesign models. A main indicator was the position the model takes going from fully face-to-face towards fully online activities.

The recognised common characteristics of the course-redesign are: whole course redesign, active learning, computer-based learning resources, mastery learning, on demand help, and alternative staffing.

The author presented along with the examples, five design models that varies according to the corresponding discipline, the particular student audience and the preferences of faculty.

1. The Supplemental Model is characterised by the retention of traditional course basic structure (number of class meetings) by adding technology-based out of class activities, and/or change of the class activities.

2. Through Replacement Model the classroom time is reduced and face-to-face time is replaced (not supplemented) with online, interactive students activities. The choice has to be made based on the evaluation that some activities can be more successfully performed online.

3. By the elimination of all classroom work and by its replacement with online learning materials and on-demand lecturer intervention, The Emporium Model offers the students: the choice when to access course materials, the use of types of materials corresponding to their needs, and how quickly to work with the help on disposal.

4. In Fully Online Model lecturer designs and enables the course contents online and is responsible for the interactions and communication with the students.

5. The Buffet Model approaches to the student as an individual and offers many more learning options within the course. It encompasses different amount of interaction with faculty, lecturer and one another, different learning
opportunities (lectures, individual discovery class or web-based laboratories, team/group discovery laboratories, individual and group live and remote review, small-group study sections, oral and written presentations, homework assignments..). Recent opinions put the emphasis on the fact that the blended learning is not just an integration of information and communication technologies and has to be accompanied by overall instructional redesign [16]. In [17] a graphical representation of relationship between technical integration and blended learning is given with extracted blended learning classroom characteristic of “some control that students have over learning pace, place and path” [Fig. 2].

The models of blended learning that can be met in higher education, primary and secondary education as well as in corporate training are differentiated and described in [18]. As regards higher education, the models Flipped Classroom [5] and Replacement Model [15] are cited as Classroom Replacement where classroom time is replaced by online activity. The model Online with class time supplement corresponds to Enriched Virtual [5] and Fully Online [15], where the activities are mostly performed online with face-to-face classroom meetings. The model Online and campus corresponds to Flex Model [5] and Emporium Model [15] and is characterised by all course materials completely available online and at a computer lab.

4. BLENDED LEARNING IN HIGHER EDUCATION

The challenges of blended learning in higher education are numerous and their emergence is encouraged permanently based upon the innovative technological developments and interaction through traditional learning environments, which emphasises blended learning transformational force.

For higher education courses blended learning has become the reality characterized by continuous investigation and debates of the benefits, potential and effectiveness to transform and improve the learning process. New, highly interactive, meaningful and student-centred blended learning environments have been developed fostered by the current and advanced technologies. The convergence of traditional face-to-face and distributed learning environment that were sharply separated in the past has been in progress by developing blended learning environment. Different media/method combinations and the needs of different audiences have enabled the approach of face-to-face practiced in a lecturer-centred environment and person-to-person classroom activities, and distance learning system based on self-paced learning.

Numerical indicators cited by the authors, support the fact that blended learning has been embedded through higher education. In 2005 [19], was found that 93% of doctoral programs and 89% of master’s programs, but only 50% of baccalaureate programs offered blended learning classes. In [20], a short section is given considering online course frequency and going from 2003 when roughly 10% students in higher education took an online course, to 2014, when was projected that 50% of all post-secondary students would take at least one class online. Christensen et al. [13] predicted that by 2019, 50% of all high school courses would be delivered online.

Dziuban et al. [7] believe that “the transformational nature of blended courses creates complicated interactions among many components of the university similar to those found in the literature regarding complex and social system theories.” The primary changes in the roles and expectations of faculty, students, and administrators are presumed. As regards the student population, the learning environment drastically differs from face-to-face one. The student is forced to approach with more responsibility towards blended courses with continuous and active involvement.

![Fig. 3 Models of blended learning [5]](image-url)
The presented results of research into blended learning in undergraduate studies have considered different methods of teaching and applied recent technology. In the authors’ opinion [21], the use of new information and communication technologies along with face-to-face learning and the developed new learning environment, demand serious and intensive examination of the effect upon student’s learning. The research was performed in two steps. First step dealt with the effect of involved blended learning on the obtained outcomes that was examined based on the dropout rate and the proportion of exam passes in the considered classes. Secondly, the students’ experience of the process was analysed through three aspects of their perception: the gained benefits, the effect on their learning experience and the derived satisfaction degree. Therefore, two outcome measures were combined, an objective measure regarding the final exam, and a subjective measure expressing perception of the applied blending learning. The conclusion was that the implementation of blended learning positively effects on both, students’ final course success and positive attitude towards learning.

5. BLENDED LEARNING AND PROFESSIONAL TRAINING

The benefits of e-learning for professional training has been clearly recognised for large group of people, as convenient and cost-effective. The content of e-learning can be updated easily and quickly which is the advantage in comparison with classroom methods, as well as the reduced time required to re-train and update the trainers themselves. In [22] the example from Cisco systems is mentioned when the cognition about new products and their services is enabled monthly by watching video on Internet as a part of web-based training. But the training in classroom environment still holds its importance and considerably contributes to the knowledge and performance.

The choice of blended learning approach to corporate training seems to be logical and appropriate owing to the advantages arising from its nature. By use of company’s learning management system (LMS) the learners can access to learning materials and gain the insight into. Than enters the classroom and training to support and clarify if necessary online learning activities. The example of blended learning is Autodesk Certified Instructor program where a smart LMS is used to keep specialised classroom training supplement by additional activities such as videos recorded by the learner [23]. According to [22] five benefits for corporate training may arise from the implementation of blended learning. Improved training costs and return on investment can be achieved by e-learning that enables the transfer of learning content regardless of users’ number and frequency of use. The company saving results from the reduced need for travel, reduced printed materials and lecturer time. The achievement of Ernst & Young, one of “Big Four”, a multinational professional services firm that provides assurance, tax, transactions and advisory services, are cited. This firm transformed about 2900 hours of classroom training into 700 hours of web-based learning, 200 hours of distance learning and 500 hours of classroom instruction (which was decrease of 53%). The results of training cost diminished for 35%.

The consistency of knowledge delivery process is assured by including e-learning into training. The possible differences that may occur when the training is accomplished by utilisation of the chosen training providers, is avoided. The course content can be accessed any time and any where owing to the e-learning share. The possibilities engaged through a multimedia learning environment are precious instrument to enrich learning experience, to make it repeatable and highly interactive, and always new and alive.

The effect of learner’s peculiarities that is intensively expressed and can’t be avoided through classroom learning is eliminated by inclusion of online component. Learners can follow and learn at their own pace.

6. CONCLUSION

Blended learning can be effective and convenient approach to integrate a spectrum of available learning opportunities, to extract from old and accept from new. Its potential to enhance learning effectiveness and training and to make them suitable for needs and purposes, to develop various educational pattern more appropriate for the learners, regardless aimed to academic or workplace environment, can be recognized. The phenomenon of “blending” has been not new as the forms of teaching and learning developed in the history always mean the blending of classroom work with some other forms. But now days a number of opportunities offered by information and communication technologies, brings constantly new challenges to develop more and more successful blending and the resulting educational experience.

The ability to include and combine different instructional and delivery methods, to offer different ways for communication, interaction and multimedia input that are not bounded by time and location, makes blended learning always provocative approach for continuous enhancement of learning effectiveness adaptable to various demands in higher education and professional training world.

REFERENCES


