

## Blended learning as a tool for students' cognitive independence formation

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**Abstract.** The article deals with the questions of theoretical aspects of blended learning. The author investigates approaches to define the phenomenon, different models of its implementation in teaching-learning process, considering the benefits and drawbacks of its implementation in modern higher schools regarding students' cognitive independence formation.

**Keywords:** blended learning, cognitive independence, models, modern paradigm in education.

Integration of the Ukrainian national system of education into the European socio-cultural space requires reprogramming of the modern paradigm on the principles of effective adaptation of teaching innovations at different levels. Under such conditions there is an objective need for the creation of teaching technologies and didactic models that meet diverse educational and professional needs of each individual.

Thus, the educational process in higher school should have the following features: the dominance of independent cognitive activity of students; changed role of a teacher (organization, administration, general instructing on the training material, consulting, control); changed position of a student (initiative, independent planning, implementation and reflection of one's own educational activities, responsibility for own learning, etc.).

Improvement of educational activities in the whole and within specific courses can be optimized by updating the content and innovative forms, methods and means of teaching and learning, providing development, self-development and personal fulfillment. In this regard, a higher school teacher faces with the problem of the students' cognitive independence formation on the basis

of the latest requirements for the training of highly qualified specialist.

Furthermore, modern society is increasingly switching to the implementation of innovative technologies, especially IT, into all spheres of life.

According to the law of Ukraine "On main principles of information society development in Ukraine for 2007-2015", one of the priority directions of the state policy is development of information society in Ukraine and introduction of new information and communication technologies in all spheres of public life.

Due to mentioned above we consider *blended learning* to be an optimal training model which meets the possibilities of modern technology transmission, processing, representation of educational information, as well as full interests of students, and can be released at any stage for all forms of teaching and learning.

**The aim** of this article is a theoretical analysis of such phenomenon as "blended learning", existing models of its implementation in teaching-learning process to benefit students' cognitive independence formation.

Considering the notion of such phenomenon as blended learning we found out some approaches in theoretical and practical research works and references.

**Table 1.** Blended learning definitions

1.	P. Rogers [7]	A compromise between the conventional face-to-face sessions and online learning leads us towards a new approach to teaching and learning, the so called hybrid or blended learning.
2.	R. Kraus-Hoffmann [6]	Didactically reasonable combination of traditional and e-learning.
3.	D. Kranz, B. Lüking [5]	Customer-oriented Mix of various methods and forms of learning. By the best possible combination and a balance of classroom teaching, self-study and learning phases of the work in virtual breakout rooms to an increased and sustainable learning effect be achieved.
4.	N. Rashevskaya [11]	The learning process in which conventional teaching technology is combined with innovative technologies of distant, electronic and mobile learning with the purpose of creating a harmonious combination of theoretical and practical components of the learning process.
5.	V. Joshi [4]	Integration of traditional, distant and informal learning by means of interactive technologies.
6.	D. Clark [1]	It is the use of two or more distinct methods of training. This may include combinations such as: blending classroom instruction with online instruction, blending online instruction with access to a coach or faculty member, blending simulations with structured courses, blending on-the-job training with brownbag informal sessions, blending managerial coaching with e-learning activities.
7.	C. Graham [2]	Blended learning is the combination of instruction from two historically separate models of teaching and learning: traditional F2F learning systems and distributed learning systems. It also emphasizes the central role of computer-based technologies in blended learning.
8.	A. Heinze [3]	The integrated form of different types of Internet learning electronic distant and traditional learning in which the learning material in any electronic form (text, audio or video format, PPT presentations, flash animation, Web resources etc.) is transmitted to the student via the Internet or a local network for independent study, following further working out and verification of the quality of the obtained students' knowledge and skills performed in the classroom under the direct guidance of a teacher using traditional and multimedia tutorials.

These definitions can help us understand where these complementary concepts fall on our continuum of technology-enriched learning environments. The proposed understanding of the relations between the above types of training may be used for the development of the methodology followed constructing models of learning at high schools.

The literature suggests some approaches to creating discrete models of blended learning in practice.

1. "The rotation model", in which online engagement is combined or rather, embedded, within an range of face-to-face forms of instruction in a cyclical manner.

2. "The flex model", in which multiple students are engaged primarily online, but under the supervision of a teacher who is physically present.

3. "The self-blending ("A La Carte") model", in which students choose different courses to take independently, but do so in a setting where a supervising teacher and other students are co-present.

4. "The enriched-virtual model", in which online, virtual experiences are seen as being enriched only periodically through arrangements of physical co-presence [8, pp. 8-15].

J. Trius and I. Gerasimenko [12] highlight the following models:

- Traditional practical classes with the use of teleconferences, videoconferences, webinars, etc.;

- Practical or traditional lectures with subsequent discussion via email, forums, chat, etc.;

- Team work, followed by a discussion;

- Tutorials on the internet with classroom practical training;

- Classroom lectures supplemented with online advice of a teacher;

- Independent work of students and subsequent demonstration of the results of work on the Internet;

- Implementation of individual project work in-class or out-of-class;

- Other combinations of electronic, mobile, e-learning and traditional learning.

D. Beresnev [9] identifies the following blends:

- The combination of learning and practical activities with following discussion of obtained results, analysis and correction of errors;

- Combination of structured and unstructured independent learning when students obtain some knowledge in the course of material on pre-defined path, and some on their own, without the guidance of a teacher (for example, to find a solution for specific problems using Internet resources);

- A combination of formal and informal learning in which learning occurs on pre-prepared material given in a specific sequence, the other part is sharing ideas in teams in the process of personal and virtual communication;

- A combination of synchronous and asynchronous learning. In this case, knowledge transfer technologies do not require simultaneous participation of a group of people (forums, interactive tutorials, etc.) that you can learn regardless of time and place; simultaneous actions are applied at face to face meetings, video and audio conferences, and chat rooms.

Considering the models above we can conclude blended learning covers a wide range of activities

between conventional face-to-face interactions and those that are fully online. Thus there are some more terms used, synchronous and asynchronous learning. The activity is synchronous, if instructions occur in real time, whether in a physical or a virtual place, or asynchronous, with a time lag between the presentation of instructional stimuli and student responses, allowing communication and collaboration over a period of time from anywhere and anytime.

The concept blended learning can be found in traditional teaching where synchronous (instructor-to-student or student-to-student interaction in real-time) and asynchronous (teaching-learning interaction that does not take place in real-time or in-person) tools are combined. Such synchronous form as a lecture (teacher-centered teaching) may be accompanied with the team work (synchronous-asynchronous) and individual work (asynchronous). The higher the level of autonomy of the educational activity, the higher the degree of asynchrony.

However, blended learning has much more advantages comparing with the traditional one. Its implementation in teaching-learning process helps:

- to facilitate course management and resources for learner support. For example, to provide information and resources to students (e.g. lecture notes or recordings, assessment guidelines), and to perform basic administrative functions (e.g. announcements or course emails);

- to enrich the quality of the student learning experience through interactive learning activities beyond those attainable through face-to-face classroom interactions. For example, utilising technology to support communication and collaboration, assessment and the management of your course;

- to support learning that is largely self-directed but also involves the use of interactive and collaborative learning activities. In this mode courses are delivered fully online.

Having analyzed the models of blended learning, it can be concluded it benefits in the terms of individual learning style: level, type, cognitive abilities, pace of learning; broadens the spaces and opportunities available for learning supporting the provision of information and resources to students; ensures the involvement of students in learning activities engaging and motivating them through interactivity and collaboration; improves academic performance supporting course management activities (e.g., communication, assessment submission, marking and feedback); Blended learning promotes individualization of education and information of student socialization. On the other hand there is a misconception that the use of the Internet technologies negates the need for face-to-face education.

Blended learning develops the ability to organize and plan work independently to obtain and analyze knowledge, to search for and select information, make decisions, to educate ourselves. In addition, it allows to form skills of presentation of projects, which is especially important for future professional activity of trainees.

Considering the effect of blended learning implementation the following skills are formed:

- to plan own learning;

- to organize own learning effectively, orienting them toward the final result;

- to make decisions, to make informed choices and to bear responsibility for them;
- to work in the information space;
- to select information in accordance with the subject;
- to structure the information and to use adequately to accomplish the task;
- to present results of activities using various information technologies.

Also, blended training has a number of technical problems (hardware and software and support rate; low bandwidth ability of communication channels, etc.), social and psychological problems (problems in student – teacher interaction; level of self-organization of students; the expenses of students to access the Internet),

educational problems (the lack of preparedness of teachers to use the technology; objective evaluation of educational achievements of students; lack of direct contact with a teacher, the need to create didactic materials in digital form, etc.).

Of course, the implementation of blended learning requires a lot of efforts. It requires changes to the regulatory framework, and developing appropriate training content and retraining of personnel. But without a doubt, today's trends in all the fields of social and industrial activities demand developing a global plan for modernization of the entire educational sphere. In our opinion, the development of blended learning may be one of the key directions of this modernization plan.

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**Комбинированное обучение как инструмент формирования познавательной самостоятельности студентов**

**В. И. Довганец**

**Аннотация.** В статье рассмотрены вопросы теоретических аспектов комбинированного обучения. Автор исследует подходы к определению феномена, различные модели его реализации в учебном процессе, рассматривает преимущества и недостатки внедрения комбинированного обучения в современных высших учебных заведениях с целью формирования учебной познавательной самостоятельности студентов.

**Ключевые слова:** комбинированное обучение, познавательная самостоятельность, модели, современные парадигмы в образовании.