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Marian F. Byrka
Doctor of Education, Department of Pedagogy, Psychology and Education Management, Associate Professor
Institute of Postgraduate Pedagogical Education of Chernivtsi region, Chernivtsi, Ukraine
ORCID ID 0000-0002-2891-0044
marian.byrka@gmail.com

BLENDED LEARNING STRATEGY IN TEACHER TRAINING PROGRAMS

Abstract. The article examines the implementation of blended learning strategy in teacher training programs as an innovation in online learning. The blended learning idea comes from blending elements which use online technology with more traditional face-to-face teaching in the same course. The article analyses teacher training programs offered by Chernivtsi Regional Institute of Postgraduate Pedagogical Education. Additional data were gathered through a questionnaire administered to teachers who attended training courses. The characteristics of blended learning strategy, its benefits and limitations for teacher training are supported by a review of literature. The article closes with the comparison of curriculum components (content delivery, learner activities, materials, and required competences) between traditional and blended learning teacher training programs. Having obvious benefits in teacher training programs, the implementation of blended learning strategy sets some additional requirements to a learner, as well as to course instructors and lectors.

Keywords: ICT in learning; online leaning; blended learning; teacher training; curriculum.

1. INTRODUCTION

The problem statement. Intensive development of the information society increases the influence of information and computer technologies (ICT) on the postgraduate education system which serves as a tool providing adaptation of the entire Ukrainian education system to changes in the educational environment. This leads to changes in forms and methods of teacher training, placing a higher emphasis on teacher's self-education, collaboration between teachers, and wide use of ICT.

Providing such benefits in teacher training process as cost reduction, free time schedule and location convenience, online teacher training programs (TTP) have to accommodate different types of learner's activities and ensure their educational success in professional development. In fact, traditional online teacher training programs do not offer enough face-to-face (F2F) interaction, either with instructor, or with colleagues that attend teacher training courses. Therefore, nowadays teachers require new forms of professional development which should include both online and face-to-face learning in blended approach.

The study arises out of the consideration that blended learning strategy (BLS) in teacher training programs (TTP) offers flexibility of access to and use of different kinds of educational materials for the learner and integration of online and face-to-face learning.

Analysis of recent studies and publications. Problems of using ICT in learning and teaching, ICT literacy, and online education as main challenges of information society have become the subjects of study for many Ukrainian and foreign scholars.

In particular, O. Spirin specified the external and internal criteria and quality indicators of information and communication technologies of learning [1], O. Ovcharuk and N. Soroko analysed the modern studies and prospects of information and communication competency development in Ukrainian education system [2].

The concepts of ICT-based pedagogic innovations and integrating ICT into teaching-learning practices have been presented in works by A. Kollias and K. Kikis [3] and B. M. Alemu [4]. S. M. Khan, M. A. Butt and M. Z. Baba discussed the impact of ICT on teaching

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and learning process [5]. M. Wilson, K. Scalise and P. Gochyyev analysed the changes of ICT literacy from computer skills to social network settings [6]. G. Kiersley presented personal reflections of online learning on the transformation of education in the 21-st century [7], and C. Twigg studied new models for online learning [8].

Articles devoted to the blended learning are of special interest in our study. The topics discussed are: blended learning as the modern perspective of distance education in the age of globalization (S. Sethy) [9], opportunities of blended learning to enhance educational programming and meetings (J. Rooney) [10], definition, current trends, and future directions of blended learning systems (C. Graham) [11], future directions of blended learning in higher education and workplace learning settings (C. Bonk, K. Kim, T. Zeng) [12], benefits and challenges of blended learning environments (C. Graham, S. Allen, and D. Ure [13], deficits and prospects of blended learning in higher education (L. Cuesta Medina) [14].

Although a lot of works have been presented in this field, very few studies explore the implementation of blended learning strategy in teacher training educational process.

The goal of the article is to examine the characteristics of blended learning strategy, its advantages and limitations in teacher training programs.

2. RESEARCH METHODS

The present study used a qualitative, inductive, research design with all appropriate ethical concerns taken into consideration to comply with the norms and standards of the field. Data was collected using a questionnaire directed to teachers who attended training courses at Chernivtsi Regional Institute of Postgraduate Pedagogical Education. The primary objective for the instrument was to collect data on the forms of teacher professional development in conditions of information society. The questionnaire had the additional goals of gathering data on the teacher professional development challenges, teacher ICT competence, as well as the use of ICT in teaching. The questionnaire was distributed to 500 people, 423 of whom responded. Each respondent to the questionnaire provided their informed consent as a participant in the study.

3. THE RESULTS AND DISCUSSION

3.1. Teacher Training Courses

The aim of Ukrainian postgraduate teacher education system is to provide the professional development of teachers after graduation until the conclusion of their professional activities and is regarded as in-service training. This kind of teacher professional development is realized as *teacher training courses* provided by regional institutes of postgraduate pedagogical education (RIPPE). Attending the training courses at least once every five years is obligatory for every teacher. Therefore, all teachers should attend the training courses, as the procedure of their accreditation demands updating of their professional knowledge and skills at the RIPPE [15].

Traditionally the RIPPE provides full time teacher training courses conducted in classroom settings using ICT for presentation of educational materials. F2F instructions and communication is used as the main form of instruction and communication.

For example, the RIPPE of Chernivtsi region organises full time courses with diversity of TTP for 52 categories of pedagogical staff. Every year teacher training courses are attended by more than 3,500 teachers of primary, secondary and high school, and some vocational and higher education institutions.

TTP are provided for a variety of educational disciplines and subjects mostly in full

time form and their duration depends on the teacher's category (from 72 to 144 hours):

- for teachers with the categories "specialist" and "specialist of the 2nd category" the duration is four weeks (144 hours);
- for teachers with the categories "specialist of the 2nd category" and "specialist of the 1st category" the duration is three weeks (108 hours);
- for teachers with the category "specialist of the highest category" the duration is two weeks (72 hours).
- Additionally RIPPE of Chernivtsi region provides:
- three-week full time integrated courses for teachers who teach several subjects (108 hours);
- three-week individual courses for teachers who teach several disciplines (108 hours).

Moreover, in recent ten years the institute has implemented online (distance) form of teacher training courses that last three months, but only for teachers with the category "specialist of the highest category" and position "senior teacher" or "teacher-methodologist".

Curriculum of TTP has a modular structure and comprises three modules: *socio-humanitarian, professional and control-diagnostic*. Each module has invariant and variable parts. The variability of TTP is achievable by learners' free choice of many special courses, lectures and seminars. The TTP increases the value of teacher self-development both as a professional and as a personality, on the basis of mastering the modern knowledge and skills in theory and methodology of the subject taught.

The invariant part of the *socio-humanitarian module* includes topics from the following subjects: philosophy of education, current legislation of Ukrainian education, the legislative base for protection of childhood, labor protection legislation, Ukrainian-speaking aspects of humanity education, sociological aspects of education etc. The variable part includes different lecture courses: the history of Ukrainian education, Ukrainian studies, sociology, cultural studies, ecology, political science, religious studies, energy conservation, economics, etc. (depending on the specialty of teachers, their work experience and professional inquiries).

The invariant part of the *professional module* includes topics: education development, innovative pedagogy, psychological and pedagogical support of the educational process, current problems in education, methodological support of teaching the subject, introduction of innovative teaching technologies, modern teaching methods, the use of information and communication technologies in studying the subject, work with gifted students, organization of extra-curricular educational work with students, etc. Practical psychology, project activity, gender pedagogy, culture of health are included in the variable part of the module.

The *control-diagnostic module* is completely invariant and includes the defence of an individual teacher project and a number of tests for each module. Its aim is to diagnose the level of teacher professional development and to define the problems that occur in their daily professional activities.

However, the effectiveness of these courses is strongly doubted because they are not regular enough and their content is mostly predetermined.

To determine the preferable forms of teacher professional development in modern conditions, as well as teacher professional development challenges and teacher ICT competence, we conducted the survey among 500 teachers, 423 of whom responded, who attended teacher training courses at RIPPE of Chernivtsi region.

According to the survey the most effective forms of teacher professional development (Figure 1) are: teacher training courses (37 %), online education (22%), and ICT-based self-education (18%). Moreover, such traditional forms of teacher professional development as seminars, conferences and self-education are preferable to less than ten percent of respondents (respectively, 9% and 6%). Additionally, only 4% of respondents preferred innovative forms of teacher professional development such as trainings and professional communities.

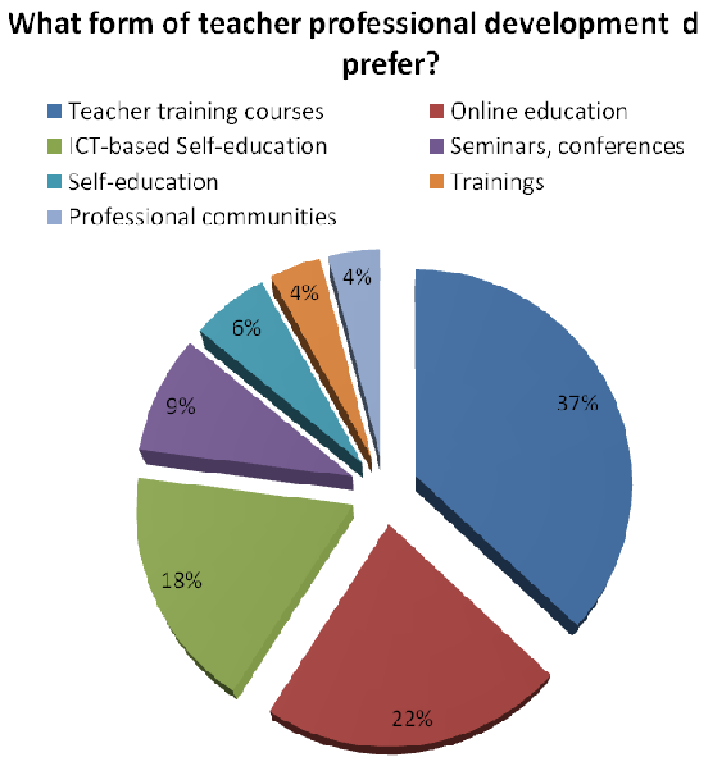

Figure 1. Preferable forms of teacher professional development

The acquired survey results are substantial to make conclusion that implementing of blended learning strategy in teacher training programs is feasible, because the responders consider both the teacher training courses, online education, and ICT-based self-education as most preferable forms of professional development.

3.2. Blended Learning Strategy Realisation in Teacher Training Programs

The evolution of modern information technologies has profoundly changed the teacher professional development and activities. The new forms of online communication and resources give a possibility for teachers to share their ideas and get new information without any influence from traditional educational actors like school authorities or teacher trainers. In addition, teachers have access to a new form of education – online learning. These changes deeply affect the ways of teacher training process and tend to fuse both online and traditional learning in a new strategy – blended learning.

As stated by the recent research [14], blended learning (BL) is a widely-accepted understanding that integrating both modalities (online learning and face-to-face learning) ensures flexibility of access to and use of knowledge.

BL conceptualisation involves the addition of ICT to traditional learning methods in combination with different instructional delivery modes by fusing the socialisation opportunities of the F2F classroom with the technologically assisted learning possibilities of the online environment [10], [12]. However, BL does not mean bolting technology onto a traditional course and/or using technology as an add-on to teach a difficult concept or deliver supplemental information [13].

According to C. Graham [11], the current definitions of BL tend to address three commonly related aspects of instruction and learning: a blend of online and face-to-face instruction, a blend of instructional methods, a blend of instructional modalities.

As stated in the latest study of foreign scholars [9] - [14], there are numerous benefits and opportunities of blending learning strategy to enhance the effectiveness of the teacher

training process. Some of them are:

- - BL surpasses barriers of time and place;
- - BL fosters higher levels of interaction between learner and instructor, between learner and learner, between learner and content, and between learner and course interface [10];
- - BL fosters not only the use of different information and communication technologies but also facilitates the emergence and development of different kinds of interactions and encounters among participants [13];
- - BL offers instructional flexibility (via F2F, online instructor-led activities, web-based self-access activities) by using a practical, up-to-date, and time-effective complement to lessons. Instructors can also reduce classroom lecture time by addressing class-related issues via audio-visual means [12];
- - BL offers educational communities the opportunity to customise their learning using synchronous and asynchronous delivery modes to increase levels of interaction among the agents involved [14];
- - BL offers the possibility to design and implement inquiry-based learning activities through unrestricted interaction and critical discourse, which fosters more critical and creative learners [10];
- - BL offers the opportunity for learners to customise their learning experiences according to their needs, styles, skills, demographics, previous learning history with online formats, and beliefs [11];
- - in BL learners are provided with different sets of components to pick and choose and enhance their academic experience [9];
- - in BL learners can develop different abilities to find, use, and evaluate information ethically and effectively [13];
- - BL is an effective and low-risk strategy for meeting the challenge of the transformational changes that technological developments bring to education [12].

C. Graham, S. Allen, and D. Ure [13] claim that BL can occur at the activity level, the course level, the program level, or the institutional level:

- *blending at the activity level* – a learning activity that is composed of both F2F and computer-mediated elements;
- *blending at the course level* is used in two options: 1) the learning activities that use computer-mediated and F2F sections that overlap in time; 2) the learning activities in different time blocks that are structured chronologically but do not necessarily overlap;
- *blending at the program level* – participants choose a mix between F2F courses and online courses, or the course offerings (composed of F2F and online courses) are prearranged by the program.

According to S. Sethy [9] an effective blended learning TTP should ensure that it: promotes connections and conversations, guides, directs, and tracks learning routes, nurtures a world-class global workforce, provides consistent and updated messages, utilises the technologies efficiently, fosters independent habits for learning and reference, encourages learning and work and improves performance and control costs.

Therefore, BL should be viewed as an opportunity to change the way that teacher training courses are developed, scheduled, and delivered in postgraduate education through a combination of online and F2F instruction.

The conducted review of literature allowed us to identify four main components of a curriculum to be compared: content delivery, learner activities, materials, and required competences.

Before comparison of curriculum components between traditional on-campus and blended learning teacher training program, it is important to discuss the characteristics of blended teacher training program provided by RIPPE.

Today, blended teacher training program is provided by RIPPE only for teachers with the category "specialist of the highest category" and position "senior teacher" or "teacher-methodologist". Such TTP is implemented in three stages and lasts between three and four months, depending on the subject taught. The first and the third stages are traditional and are provided as one or two-day on-campus sessions, and the second stage is purely online [15].

The main forms of teacher training in the *first stage* are: lectures, seminars, practical classes, conferences, round tables, trainings etc. During this stage learners should choose a topic of an individual creative project as a part of their independent work in the second stage. The *second stage* is realised in the way of learner individual work through online computer-management system Moodle. The content of the learner work and its volume is determined by specified modules of TTP, its curriculum, methodological materials, and required competences. In the *third stage* teachers who attended training courses take different tests on pedagogy issues and the subject taught, and defend their individual creative project, implemented during the second online stage of TTP.

We provided comparison of curriculum components between traditional and blended learning teacher training programs by four main aspects: Content delivery, Learner Activities, Materials, and Required Competences (See Table 1).

Table 1

Comparison of curriculum components between traditional and blended learning teacher training programs

Traditional teacher training program	Blended learning teacher training program
Content delivery	
- time-based; - live lectures;	- online; - optional on-campus sessions; - free schedule; - on-demand: - asynchronous instructor lectures; - IT support; - tutor instruction.
Learner Activities	
- F2F; - passive learning; - active learning; - interactive learning; - work in group; - individual project;	- F2F; - online instructor-led activities; - web-based self-access activities; - individual project; - work online: e-mail, text chat, forum; - unrestricted interaction and critical discourse; - computer-mediated; - e-learning; - online modules; - online seminars.
Materials	
- oral lecture presentations; - oral lecture text; - paper tests with delayed results.	- online lecture presentations; - online lecture text; - web sites;

	- online forum for group discussions; - audio-visual and multimedia; - databases; - online tests with immediate results.
Required competences	
- the basic level of professional competence; - communicative competence.	- higher level of professional competence; - communicative competence; - ICT competence; - self-education competence; - self-management competence.

Therefore, we can conclude that implementation of blended learning strategy in teacher training programs sets some additional requirements to learners, as well as to course instructors and lectors.

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

Teacher training programs are offered by Chernivtsi Regional Institute of Postgraduate Pedagogical Education in the form of full time teacher training courses. These courses are conducted mostly in classroom settings with F2F instruction and communication. The learning process is supported by using ICT for presentation of educational materials. Course duration depends on teacher's category (from 72 to 144 hours). The TTP curriculum is represented by three modules: socio-humanitarian, professional and control-diagnostic. Each module has invariant and variable parts. However, it should be mentioned that their effectiveness is strongly doubted because of their irregularity and mostly predetermined content.

The survey conducted among 423 teachers who attended teacher training course at Regional Institute of Postgraduate Pedagogical Education of Chernivtsi region has shown that responders consider teacher training courses, online education, and ICT-based self-education as most preferable forms of professional development. This is substantial to make conclusion that implementing blended learning strategy in teacher training programs is feasible.

Blended learning strategy is the widely-accepted concept that integrates online learning and face-to-face learning that makes teacher training process more flexible and person-oriented.

The implementation of BLS in TTP has a number of benefits and possibilities for learners:

1) Facilitates the use of multiple means and media sources to produce and deliver content, optimise learner time and reduce costs;

2) Enables multiple options to access and produce content both synchronously and asynchronously, with or without the assistance of an instructor/lecturer;

3) Offers the combination of varied social interaction patterns in a synchronous/asynchronous scenario that meets different needs and learning styles;

4) Enables to take advantage of online resources, as well as collaborative learning opportunities;

5) Offers additional, carefully designed, and varied learning materials, available at any time and place.

However, successful implementation of blended learning strategy in teacher training courses meets some challenges. First, it requires a theoretically sound instructional model, course development assistance, and on-going formative and summative assessment plans. Second, learner personalisation should be considered, especially at the materials design and

BLS implementation phases. Finally, Regional Institute of Postgraduate Pedagogical Education faculty and staff need to ensure that BLS in TTP appropriately integrates F2F and online components.

The comparison of curriculum components between traditional and blended learning teacher training program has shown that BLS offers more flexible and variable content delivery. Moreover, BLS has a free schedule and optional on-campus sessions, which is useful for teachers from rural locations. From the learner activities perspective, BLS has much more different forms than traditional TTP, but most of them are computer oriented and mediated. In terms of materials, BLS provides a wider variety of online sources, attachable and accessible to teachers during the whole training course. Another advantage of BLS is online testing with immediate results. However, BLS requires much more competences than traditional TTP. The key challenges here are appropriate level of ICT competence, self-education competence, and self-management competence.

Further research will focus primarily on the issue of assessment of teachers' willingness to attend blended teacher training courses.

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СТРАТЕГІЯ ЗМІШАНОГО НАВЧАННЯ В ПРОГРАМАХ ПІДВИЩЕННЯ КВАЛІФІКАЦІЇ ВЧИТЕЛІВ

Бирка Маріан Філаретович
доктор педагогічних наук, кафедра педагогіки, психології та управління освітою, доцент
Інститут післядипломної педагогічної освіти Чернівецької області, Чернівці, Україна
ORCID ID 0000-0002-2891-0044
marian.byrka@gmail.com

Анотація. У статті розглядаються особливості реалізації стратегії змішаного навчання в програмах підвищення кваліфікації вчителів як інновація в он-лайн навчанні. Ідея змішаного навчання виходить із змішування елементів он-лайн технологій з традиційним індивідуальним навчанням в одному і тому ж курсі. У статті проведено аналіз програм підвищення кваліфікації вчителів, пропонованих регіональним інститутом післядипломної педагогічної освіти. Додаткові дані були зібрані за допомогою опитування вчителів, які відвідували курси підвищення кваліфікації. Визначено характеристики стратегії змішаного навчання, її переваги й обмеження для підвищення кваліфікації вчителів. На завершення статті проведено порівняння компонентів навчального плану (доставка змісту, діяльність того, хто навчається, матеріали та необхідні компетентності) традиційної і змішаної програм підвищення кваліфікації вчителів. Зважаючи на всі переваги стратегії змішаного навчання в програмах підвищення кваліфікації вчителів, її реалізація встановлює деякі додаткові вимоги як до вчителів, так і до методистів і лекторів.

Ключові слова: ІКТ в навчанні; он-лайн навчання; змішане навчання; програма підвищення кваліфікації вчителів; навчальний план.

СТРАТЕГИЯ СМЕШАННОГО ОБУЧЕНИЯ В ПРОГРАММАХ ПОВЫШЕНИЯ КВАЛИФИКАЦИИ УЧИТЕЛЕЙ

Бырка Мариан Филаретович
доктор педагогических наук, кафедра педагогики, психологии и управления образованием, доцент
Институт последипломного педагогического образования Черновицкой области, Черновцы, Украина
ORCID ID 0000-0002-2891-0044
marian.byrka@gmail.com

Аннотация. В статье рассматриваются особенности реализации стратегии смешанного обучения в программах повышения квалификации учителей как инновация в он-лайн обучении. Идея смешанного обучения происходит из смешивания элементов он-лайн технологий с традиционным индивидуальным обучением в одном и том же курсе. В статье проведен анализ программ повышения квалификации, предлагаемых региональным институтом последипломного педагогического образования. Дополнительные данные были собраны с помощью опроса учителей, которые посещали курсы повышения квалификации. Определены характеристики стратегии смешанного обучения, ее преимуществ и ограничений для повышения квалификации учителей. В завершении статьи проведено сравнение компонентов учебного плана (доставка содержания, деятельность обучаемого, материалы и требуемые компетентности) традиционной и смешанной программ повышения квалификации учителей. Несмотря на все преимущества стратегии смешанного обучения в программах повышения квалификации учителей, ее реализация устанавливает некоторые дополнительные требования, как к учителям, так и к методистам и лекторам.

Ключевые слова: ИКТ в обучении; он-лайн обучение; смешанное обучение; программа повышения квалификации учителей; учебный план.

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