

THE POTENTIAL OF USING THE BLENDED LEARNING FORMAT IN SOCIAL UNIVERSITIES IN ST. PETERSBURG

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ABSTRACT

Studying the implementation of the blended learning format in higher education is currently an interesting and relevant topic. This article contains a study of the development potential of blended learning within a social university. The research question is determined, on the one hand, by the popularity and rapid spread of the distant learning component, and on the other hand, by its obvious limitations. The study was conducted using a survey method. The obtained data were processed using factor and regression analysis with the aid of the R programming language. Regression analysis made it possible to identify latent learning factors that affect the effectiveness of the blended learning format. The study revealed that distant learning does not allow one to fully develop communication skills and provide students with tacit knowledge. The authors of the article discovered and substantiated the need to use classical learning to transfer tacit knowledge, soft skills. It was also revealed that the Socratic method, which has proven itself in the field of teaching the humanities, cannot be applied in an online format. Based on the results of the study, recommendations were made for the development of the blended learning format in social universities.

KEYWORDS

Blended Learning, Education, Communication Skills, Helping Professions, Tacit Knowledge

1. INTRODUCTION

The spread of digital communication and the emergence of many software solutions for distant learning raise the issue of the prospects for using blended learning technologies in the process of obtaining higher education. A sharp actualization of this issue in the scientific and professional literature has been observed after the 2019 coronavirus pandemic (Aristovnik, 2023), when most universities were forced to switch to a distant learning format.

A study of the effectiveness of using elements of distance learning during the COVID-19 pandemic showed that it can also be an effective way to develop independent thinking and responsibility of students in general (Ferrer et al., 2023). However, for socially oriented universities, the introduction of distant learning technologies into the educational process is problematic, since training in social specialties involves mastering effective communication skills, which can only be developed within the traditional format of full-time education. The authors of the article discovered and substantiated the need to use classical learning to transfer tacit knowledge. It was also revealed that the Socratic method, which has proven itself in the field of teaching the humanities, cannot be applied in an online format that was not mentioned in previous studies of blended learning for helping professions (Niu et al., 2023, Achmad et al., 2023).

The contradiction between the trends towards the universal introduction of distant education and the limitations of this format has necessitated the need to conduct an empirical study of the practice of using the blended learning format in the current educational process.

2. USING THE BLENDED LEARNING FORMAT IN THE CURRENT EDUCATIONAL PROCESS

In our study, the use of the “blended learning” format in the educational process was studied on the basis of the St. Petersburg State Institute of Psychology and Social Work. This university specializes in social programs and trains social workers, conflict specialists and psychologists. The institute implements both distant learning technologies via video communication and asynchronous distant learning technologies. At the same time, training in each of the institute’s programs necessarily includes a full-time training format. In essence, the institute implements a blended learning format “blended learning”, which can be defined as “a combination of face-to-face classes and distant online learning, that is, autonomous a/synchronous learning, enhanced by digital technologies, conducted individually or in pairs, in groups from home ”(Simonova 2023. P. 5093). The COVID-19 pandemic has contributed to a deeper implementation of distant learning in the educational program of the institute and the emergence of educational programs primarily focused on distant learning.

In most cases, both students and teachers positively assess the introduction of distant learning technologies into the educational process, since the combination of face-to-face and online learning formats is more convenient for both the teacher and the student. The introduction of distant learning elements in education allows those participants in the educational process to attend classes who, for various reasons, cannot participate in person. Distant education allows you to save time, which is necessary to physically arrive at the institute. Similar positive assessments prevail in the scientific literature. According to a number of scientific publications, the blended learning format “not only offers more opportunities in the learning process, but is also more effective. Blended learning environments support individual student learning through collaborative efforts in a virtual environment and help students and teachers communicate more” (Tonbuloglu, 2023. P.13988).

However, the widespread introduction of the digital learning format into practice has led to the identification of some shortcomings of this format. Despite the overall positive assessment of distant learning, some representatives of the professional community express concerns that e-learning will hinder the development of students' interpersonal skills, which are indispensable for members of the helping professions. Even face-to-face video communication cannot fully prepare a specialist for real interaction with colleagues and clients. When implementing distant education, students do not engage in full social interaction (Sirotova, 2023) and this can make them feel like they are participating in a simulacrum of education.

An important aspect of the implementation of the “blended learning” format is to increase the role of the student as an active learner under the guidance of teachers. In distant learning, the student has more control over the learning process on their own and “the most important responsibility falls on the students” (Duman, 2023. P. 60). This situation creates difficulties for the least organized students.

The described opportunities provided by the implementation of the “blended learning” format and the limitations of this format led to the need to conduct an empirical study of the problem on the basis of the institute.

3. FACTOR AND REGRESSION ANALYSIS OF BLENDED LEARNING POTENTIAL IN SOCIAL UNIVERSITIES OF ST PETERSBURG

In September 2023, in St. Petersburg State Institute of Psychology and Social Work (St. Petersburg, Russia), a study was conducted among senior students to test the effectiveness of using blended learning during the coronavirus pandemic. Blended learning involves the use of traditional and e-learning formats. There are 204 respondents in this survey. The age and gender balance of sample was made in accordance with the gender and age structure of the population of the Russian Federation for the age category 20-24 (<https://rosstat.gov.ru/compendium/document/13284>). This balance is 51% men and 49% women. The survey was conducted in online format. The questionnaire was formed based on scientific literature and consultations with the specialists-practitioners in this sphere. The questionnaire is available at the link https://vk.com/sociologica?w=wall-4718166_116%2Fall. The survey was aimed at testing two hypotheses:

H1: Students' inclination towards blended learning is determined by a number of factors to be identified in this study.

H2: Blended learning is a more effective format for teaching students at a social university than traditional learning.

To process the questionnaire data, factor analysis based on SPSS and a logistic regression model using the R programming language were used.

Testing hypothesis 1 involved the use of factor analysis. The survey was conducted using Google forms, the data of which were coded according to the binary principle: 1 - a clearly expressed characteristic, 0 - a characteristic that is weakly expressed or not expressed at all.

Preliminary testing of the data made it possible to verify their suitability for factor analysis. For this purpose, the Kaiser-Meier-Olkin (KMO) criterion of sampling adequacy and Bartlett's criterion of sphericity were used. The sampling adequacy criterion is 0.611, approaching 1, which is an indicator of the quality of this criterion. The sphericity test has statistical significance at a level of less than 0.0001. This means that the correlation in the correlation matrix is statistically significantly different from zero, which means that this matrix is suitable for factor analysis. Through factor analysis, it was possible to discover five latent factors associated with the use of blended learning (Table 1). The variables included in each factor have a factor loading of at least 0.4. A number of variables included in the identified latent factors have a negative sign, which affects the sign of the predictors in regression analysis.

Table 1. Component matrix after rotation

	Components				
	1	2	3	4	5
satisf_ed	,798				
satisf_discipline	,797				
teacher_books	,503			-,393	
ed_policy		,756			
employer_policy		,671			
ed_work			,617		
work_plan	,385		,554		
distant2020	,342		-,552		
self_development				,685	
trajectory				,669	-,395
group_work					,760
private relations			,370		,653

The first factor includes such variables as “Satisfaction with the organization of the educational process”, “Satisfaction with the content of the disciplines”, “Use of sources recommended by the teacher”. This factor can be designated as “Satisfaction with the acquired profession.” All variables included in this factor have a positive sign.

The second identified factor contains two variables “Satisfaction with state educational policy”, “Cooperation of universities with employers”. They also have a positive sign. This factor can be designated as “Practice-oriented learning.”

The third factor includes the variables “The relationship between a good job and the quality of education”, “Work in a specialty after graduation”, “Satisfaction with training during a pandemic” (with a negative sign). This factor can be designated “Formation of professional competencies.”

The fourth factor contains two variables – “Tendency towards self-development”, “Choice of an individual trajectory”. Both variables have a positive sign. This factor can be designated “Formation of the personality of a university graduate.”

The fifth factor includes two variables “Group work in the classroom, “Formation of personal connections in the learning process.” This factor can be designated as “Quality of graduate socialization.”

Using the results of factor analysis, we will construct a logistic regression equation. Checking the applicability conditions for building a logistic regression model in R gives a positive result. The results of logistic regression calculations are shown in table. 2. They show that only two factors “Formation of professional competencies” (FAC3_1) and “Quality of graduate socialization” (FAC5_1) are statistically significant.

Table 2. Results of logistic regression for binary data

Predictors	Estimates	Std. error	z value	p-level
Intercept	2.3905	0.2898	8.250	<2e-16 ***
Satisfaction with the acquired profession (FAC1_1)	0.2373	0.2341	1.014	0.3107
Practice-oriented learning (FAC2_1)	-0.3314	0.2345	-1.413	0.1576
Formation of professional competencies (FAC3_1)	-0.6306	0.2561	-2.463	0.0138 *
Formation of the personality of a university graduate (FAC4_1)	0.1398	0.2105	0.664	0.5067
Quality of graduate socialization (FAC5_1)	-0.6130	0.2952	-2.076	0.0378 *

Thus, after removing factors that did not reach the level of statistical significance, we can write the resulting logistic regression equation:

Probability of using blended learning~Binomial (n=1, π_i)

Mathematical expectation E (Efficiency of blended learning)= π_i

The logit link function converts probabilities into logits when interpreting regression coefficients.

$$\text{Ln}\left(\frac{\pi_i}{1-\pi_i}\right) = \eta_i$$

$$\eta_i = 2,35 - 0,67 * \text{FAC3_1} - 0,69 * \text{FAC5_1} \quad (1)$$

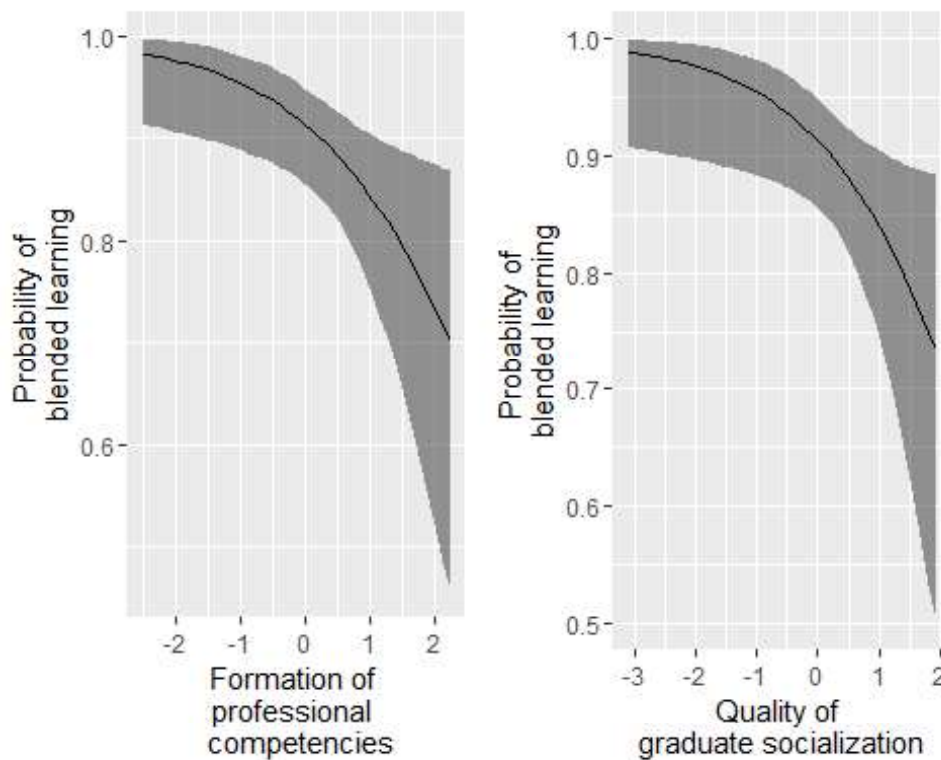


Figure 1. The resulting graphs of the dependence of the probability of using the implementation of the blended learning model on the predictors (factors FAC3_1, FAC5_1).

The logistic regression equation shows the inverse relationship between the factor FAC3_1 (“Formation of professional competencies”) and the probability of using blended learning, as well as between the factor FAC5_1 (“Quality of socialization of a graduate”) and the dependent variable. Both factors have approximately the same coefficients, so we can talk about approximately the same strength of their impact on the dependent variable “Probability of using blended learning”. In Fig. 1 presents graphs that show the relationship between the selected factors and the dependent variable. When interpreting the visual reflections of the relationships, we can conclude that when the factor changes by one positive standard deviation, the probability of using the blended learning model decreases. When moving backwards along the graphs, the probability of using the blended learning model increases.

The interpretation of the logistic regression coefficients allows us to conclude that when the factor FAC3_1 (“Formation of professional competencies”) changes by one unit, the probability of using the blended learning model decreases by 0.51 times with the factor FAC5_1 unchanged. When the factor FAC5_1 (“Quality of socialization of a graduate”) increases by one unit, the probability of implementing the blended learning model decreases by 0.50 times, with the factor FAC3_1 remaining unchanged. To obtain these results, we raise the Euler number (2.71) to the power of the coefficient associated with the independent variable.

This logistic regression equation shows that the factors “Formation of professional competencies” and “Quality of socialization of the graduate” have a decisive influence on the probability of using the blended learning model in training. These qualities are better formed in the process of traditional full-time education, which allows us to conclude that the administration of a social university should be more careful about introducing elements of distant learning into the educational process. Thus, hypothesis 2 about the effectiveness of blended learning in studying of helping professions was not confirmed.

4. INTERPRETATION OF REGRESSION ANALYSIS RESULTS AND DISCUSSION

The presented results of the questionnaire indicate that the most motivated and most purposeful students intuitively feel the limitations of the distant education format. Students who demonstrate the most developed professional competencies are aware of the need to train to solve emerging professional problems in conditions of real interpersonal interaction. Working in the field of helping professions means the need to be able to resolve conflicts, respond to non-verbal signals in the communication process, and lead the work of a group. Students reasonably wish to acquire these competencies in the format of traditional full-time education. Similarly, students who demonstrate the achievement of the best quality of socialization already have developed communication skills and are convinced of the need to improve them in the process of seminars and trainings.

The results obtained are extremely interesting because they challenge the traditional, predominantly positive perception of digital enhancement in the learning process. When discussing online learning in scientific and professional literature, the emphasis is usually on the digital competencies of teachers and students (Aldhaen, 2024). It is declared that digital competencies are the key to success both in training and in subsequent professional activities. At the same time, it is obvious that an increase in the share of digital interaction in learning will negatively affect the development of abilities for effective communication in real social interaction. With the increasing share of online learning, traditional communication is actually being replaced by digital communication and researchers tend to look for positive aspects in this. Learners are encouraged to participate in digital learning communities, which are believed to “have the potential to improve learning outcomes through improved communication” (Cao, 2023. P. 866). However, for a specialist in helping professions, such a replacement of communication is not equivalent. A specialist in helping professions must be able to respond to non-verbal signals, take into account the situation when communicating, achieve a confidential dialogue with the interlocutor and be able to implement other communication skills, the development of which can only be fully realized in a face-to-face format.

An essential aspect of learning in the digital environment is a special format for assessing knowledge, which includes tests and other tools for remote assessment of a student’s knowledge and skills. At the same time, assessment in a remote format makes it difficult for the teacher to perceive the student. In addition to obtaining the correct answer, it is necessary to evaluate the ways in which the student sought an answer to the question. If a student provides an incorrect answer, you can find that he has deep knowledge of the problem and tried to find an independent, creative way to solve it. At the same time, the correct answer may be the result of superficial knowledge, memorizing material without a deep understanding of the essence of what was read, mastering the material without gaining the ability to creatively comprehend and use it. The full-time format of training makes it possible to ask additional questions to find out how much the student correctly understands professional terms and how much he is able to connect the issues under consideration with other topics of the course. For a student, an in-person assessment of knowledge provides the opportunity to receive feedback from the teacher and clarify various subtle aspects of the material being studied. Communication in a remote format gives the student fewer opportunities to receive feedback from the teacher.

Another equally important aspect of full-time education is the ability to transfer to students not only formalized knowledge recorded in educational materials, but also latent knowledge and skills. Such knowledge and skills can be no less important for the graduate’s subsequent construction of a successful career in the social sphere. As Sternberg notes, “the terms “professional intuition” and “professional instinct” suggest that the knowledge that is associated with successful performance is tacit in nature” (Sternberg, 2000. P. 104). Teachers pass on to students not only knowledge, but also communication standards in the professional field, patterns of behavior when communicating with clients, and options for solving non-standard problems. Such knowledge is difficult to operationalize and measure, but plays a huge role in successful professional activity. This phenomenon has been called “tacit knowledge” in the scientific literature and since the 60s of the last century has been understood as “knowledge that we rely on while doing work (for example, driving a car or teaching), but which is difficult to express in language or comprehend” (Mitchell, 2022. P. 1664). Tacit knowledge determines a graduate’s ability to be more successful in their professional activities because it is an indicator of “how you organize your work, how you get along with other people and how you organize your life in general” (Sternberg, 1997. P. 92). Without obtaining such knowledge, a student cannot become a full-fledged specialist and member of the professional community. In general, tacit knowledge is extremely

important and difficult to define and study. There are no attempts in the scientific literature to study the problem of transferring tacit knowledge in the context of introducing e-learning. This is an extremely promising and extremely important topic for further scientific study.

The conducted research allows us to confidently assert that in the system of helping professions it is necessary to maintain the basic format of full-time education, which contributes to the development of the necessary professional skills. Digital learning can help this process and is a good, effective addition to traditional classical education. Therefore, the authors of the article discovered and substantiated the need to use classical learning to transfer tacit knowledge. It was also revealed that the Socratic method, which has proven itself in the field of teaching the humanities, cannot be applied in an online format.

5. CONCLUSION

The empirical data obtained as a result of the study have signs of scientific novelty and allow us to reconsider generally accepted approaches to blended learning. The current discourse on e-learning is entirely positive and ignores the many disadvantages that inevitably accompany distant learning. Increasing the share of distant learning in education is becoming increasingly popular among students and teachers. And therefore, it is overlooked that distant learning is associated with the need for student self-organization and is a good choice for responsible students. Education in a distant format does not allow students to develop full-fledged communication skills, as well as gain tacit knowledge necessary for success in subsequent professional development. The implementation of the blended learning format must be carried out in such a way as to fully preserve all the advantages of face-to-face training. Particular attention to combining full-time and distant learning formats must be paid when training specialists in helping professions, as well as other specialists for whom the ability to communicate effectively face-to-face is extremely important. Effective teaching in the helping professions requires the use of a classical format to convey tacit knowledge. The Socratic method, which has proven itself in the field of teaching the humanities, can only be applied through face-to-face interaction between teacher and student. The topic we have considered is relevant, interesting and has the characteristics of scientific novelty. However, we recognize the limitations of our study. The topic has significant potential and its development can be continued by conducting similar research for other specialties that also require developed communication skills.

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