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Student's Adaptation to Distance Learning (on Example of Armenian and Russian Students): Psychoemotional Features

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Abstract

Introduction. The article substantiates an individually and socially significant problem that is relevant to different educational systems and countries: the recent forced transition to distance learning. Distance learning is a set of educational services, which is provided through a special information and educational environment. The current study aims to investigate the attitude of ethnic Armenians and Russians to distance learning during that affected psychoemotional condition of personality. **Methods.** The study investigated the experience from distance learning in students from Russia and Armenia (N=185, M age = 21.98, SD age=5.73). The study was conducted using State-Trait Anxiety Inventory (S-Anxiety scale) and authors' questionnaire to assess distance learning experience. **Results.** The majority of Armenian and Russian students mentioned advantages of distance learning, such as they found it convenient, were satisfied and had adequate home conditions for learning. However, some disadvantages were mentioned including the difficulty of the objective assessment of their knowledge in distance learning context. Statistical analysis allowed to observe relationship between the anxiety level and students' experience with distance learning, i.e., the adaptation level and the satisfaction value. Additionally, the association between adaptation level and the country of residence was found along with the determinants of distance learning effectivity. **Discussion.** The study revealed the main trends in students' perception of distance learning on the territory of Armenia and Russia. We showed the association between psychoemotional features and assessment of distance learning.

Keywords

distance learning, psychoemotional condition, state anxiety, adaptation, ethnic Armenians, ethnic Russians

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Introduction

The education of the individual is the most important universal problem in the modern world. Especially in the 21st century, this has become the most significant condition, since this is the age of informatization and computerization of all spheres of life. In the recent decade, there has a considerable interest in the distance learning among researchers (e.g., Harting & Erthal, 2005; Moore, Dickson-Deane, & Galyen, 2011; Valentine, Gellman-Danley & Fetzner, 1999). These works reflected on the essence and content of distance education.

Recently, most educational structures across the world have switched to a distance learning format in connection with the epidemic of the coronavirus, the Covid-19 pandemic. The cardinal transformation of the format of education was a forced experiment for a significant number of universities, developing the higher education system in the direction of digitalization. The key problem, in our opinion, was the fact that distance learning has not become a general cultural practice. The transition to distance learning was performed in an extremely limited period of time, excessively harsh, without initial training, without training programs for subjects of educational activity. Today, it is unequivocally difficult to evaluate the forced, determined by the necessity of modern conditions, distance learning.

Due to this cardinal transformation of education affecting many countries worldwide, there has been outbreak in research on distance learning (e.g., Armstrong-Mensah, Ramsey-White, Yankey & Self-Brown, 2020; Berberyan, 2021; Danchikov, Prodanova, Kovalenko & Bondarenko, 2021; Demetriou, Keramioti & Hadjicharalambous, 2021; Gevorgyan, Berberyan & Berberyan, 2022). Despite this interest, to our knowledge, there have been no studies assessing distance learning experience in both Russian and Armenian students. In the current paper, we aim to investigate this transfer on example of Armenian and Russian

students, namely, psychoemotional features and adaptation to distance learning. In the rest of introduction, we will discuss the main theoretical approaches regarding distance learning and the core conceptual approaches regarding adaptation.

The Concept and Essence of Distance Learning

In psychology, the term "distance education" has the following meaning: distance education (from the Latin word distantia - distance) is an international term that acts as a purposeful and methodically organized guide for the educational and cognitive activities of students who live at a distance from an educational institution and, as a result, do not come into contact with the teachers of this institution. Based on this, the definition of distance education is considered as a predominantly independent education (self-education) but differs from self-education in that it includes some kind of feedback from the teacher. Next, we turn to the analysis of common ideas about the concept of "distance learning" in 4 components: 1) as an equivalent of distance education; 2) as a form of education; 3) as a method of obtaining education; 4) as a form and method of teaching.

There has been an ongoing discussion considering the relation between two terms: distance learning and distance education as synonyms (King, Young, Drivere-Richmond & Schrader, 2001). Gospodarik (2001) mentions that "distance learning is an educational system based on computer telecommunications using the latest pedagogical and information technologies, such as mail, the Internet, platforms for creating video meetings, etc., which is receiving education services away from an educational institution." According to Mogilev (2014), distance learning is a method of learning, a practice that "connects a teacher, a student and sources located in different areas, using special new technologies that provide interaction."

Andreev and Soldatkin (2013) view distance learning as a synthetic, integral humanistic form of education, using both traditional methods and the latest information technologies." They believe that it is better to use the term "distance learning" rather than "distance education", because education is not classified by distance to the student, but what is its purpose, its level, field of knowledge, industry, etc. According to Moiseeva et al. (2020), distance learning is a new specific form of learning that involves the use of special approaches, methods and means of teaching, contact between the teacher and students with each other. It can be noted that these formulations do not reflect the versatility of distance learning, the fact that students can be in the nearby territory is not taken into account, along with the possible contact between students (Ovsyannikov & Gustyr, 2001).

Distance learning was formed in the middle of the 20th century, when computers and telecommunications technologies were developing, at the moment it meets the requirements, and its main value is not knowledge and skills, but the information provided (Traxler, 2018). Thus, distance learning is defined as a complex of educational services, which is provided to a wide segment of the population, using a professional information and educational environment based on the methods of exchanging educational information, being at any distance. The distance learning has a range of advantages

including detailed teaching methods that are time-tested and used for large groups of students, no restrictions on the number of students in certain courses, the possibility for students to choose a schedule of educational activities that is convenient for themselves, which is the individualization of education and the possibility for students to choose a teacher who is an expert in a particular academic discipline (Sadeghi, 2019).

In addition, in the distance learning system there is considerable experience in dealing with methodological and educational materials, tasks for self-fulfillment, descriptions of tasks in a test form. Currently, distance learning, based on the latest information achievements, is gaining more and more popularity, based on the situation of the pandemic. The goals of distance learning are actually the same as those of face-to-face learning and have the same content. However, it is characterized by other forms of studying the material, forms of contact between the teacher and students, and the interaction of students with each other is also different. A demonstration of the successful implementation of a distance form of education, according to researchers, is e-learning, based on e-learning using the Internet and multimedia practiced in South Korea, the USA, France, Japan and other countries (Jiang & Xie, 2021).

So, what is distance learning in the emerging conditions? In our opinion, with this form of education, the subjects of educational activity organize the transmission and perception of educational information through a virtual environment, which is determined by the strategy of educational activity, using special technologies for the development of academic disciplines, as well as electronic and Internet communication techniques. In terms of content, under the traditional system of distance learning, the thesis: "knowledge – ability – skills – comprehension – understanding – implementation" is transformed into a complex of didactic components of the learning and virtual model of education. This mechanism goes into the following scheme: "creative awareness of the problem – reproduction by a person using his own experience – building a hypothesis and presenting a plan – solving the problem in new ways – application – introduction to the personal system" (Bederkhanova, 2003).

Psychological Adaptation and Adaptability of the Student's Personality

Psychological adaptation is a multi-level and diverse phenomenon that affects both the personal characteristics of a person and aspects of his life, i.e., his mental health and social environment, with the inclusion of all areas of activity, primarily educational and professional, in which he is included. Psychological adaptation of a personality is a bidirectional process of interaction, in which changes occur both in the mental activity of the individual and in relationships with society: in the transformation of norms, rules, values, all spheres of a person's spiritual life. With psychological adaptation, harmonization occurs in the interaction of the individual and the environment. Changes arise in the individual and in the social environment, the nature and level of which is justified by almost all life circumstances. Psychological adaptation is the process of bringing the psychological work of the individual into line with the social and socio-psychological requirements of the environment, the conditions and content of the work of a person (Ball, 1989).

Theoretical and methodological issues of socio-psychological adaptation of the personality are presented in the works of such researchers as A.A. Ball, L.I. Bozhovich, V.A. Petrovsky, J. Piaget, Z. Freud, E. Erickson and others. The most relevant is the conceptual approach of E. Erickson, who put forward the position of the existence of mutual continuous adaptation of the individual and society (Hoare, 2002). The state of psychological comfort of the individual and adaptability appears in the adapted, ordinary environment of life and work of the individual, in the process of successful resolution of adaptation problems and contradictions. Failure to comply with this state of comfort and the process of personality destabilization leads to the actualization of the needs that encourage the personality to functional interaction with the environment in order to restore the harmonization of relations.

Psychological adaptation has the ability to act as one of the ways of the formation and self-development of the individual (Rean, 1995). Representatives of the humanistic direction of psychology consider the issues of adaptation from the perspective of the optimal interaction of the individual and the environment. A. Maslow notes that the process of adaptation is dynamic, consisting in the interaction of the individual and the environment, and the main criterion for the adaptation of the individual is the degree of its integration with the environment (Maslow, 1968). In order to emphasize the result of adaptation, such a concept as the "adaptation" of an individual or group is often used. Adaptability can be defined as such a state of the person, which allows him to feel free and uninhibited in the socio-cultural environment, to be included in the main activity, to feel changes in the usual socio-cultural environment, to deepen into intrapersonal spiritual problems, to enrich his own world through more perfect forms and ways of sociocultural interaction.

Adaptation of students implies, basically, adaptation to the lifestyle of students, to indicators of typical forms of educational activity, including educational activities, various forms of communication. Based on the results of the personality adaptation potential, a certain state of the student's personality is achieved during the period of adaptation itself - adaptability. We understand the educational adaptation of students as a part of professional adaptation, as a result of which the student acquires educational knowledge and skills for successful learning and the acquisition of professional competence, as well as the main parameters of the student's social and personal characteristics are brought into dynamic balance in accordance with the conditions of the university environment (Santrosyan, 1973). Particular attention should be paid to the adaptation of first-year students, since the subsequent experience will depend on the degree of success in completing the initial stage of adaptation to the university (Voronaya, Pronenko, 2022; Voronaya, Pronenko, 2023).

The **methodological basis** of our study is the conceptual positions on distance learning in science (A.A. Andreev, Yu.P. Gospodarik, V.P. Kolmogorov, E.S. Polat, V.P. Tikhomirov and others, as well as theoretical and methodological issues of socio-psychological adaptation of the personality (A.A. Ball, L.I. Bozhovich, V.A. Petrovsky, J. Piaget, Z. Freud, E. Erickson, etc.).

Based on the thorough theoretical analysis and methodological basis, the following **hypotheses** were formulated:

1. There is a relationship between satisfaction and adaptation with distance learning and the state anxiety level.
2. The effectiveness of distance learning depends on both teacher's work and student's work.
3. The adaptation to distance learning and, thus, the preferred form of education depend on the country of residence.

Method

Participants

The study was conducted with 194 students from various universities of Armenia and Russia. At the moment of questionnaire, all the participants were studying in distant form of education. Prior to their participation, all participants gave written informed consent. Data from four participants was removed due to implausible answers (e.g., age consisting of three digits), from two – due to repetitive answers. Additionally, because our analyses concerned ethnic characteristics, we excluded 3 participants from included only participants from Armenia and Russia due to small sample size in other groups. The final sample consisted of 185 participants (153 female) with age range from 17-48 years old (mean age = 21.98, SD = 5.73; see Table 1 for descriptive statistics).

Table 1
Descriptive statistics

Participants	Number
Sex	
Female	153
Male	32
Age range	
17-25	150
25-48	35
Country of residence	
Armenia	86
Russia	99
Educational level	
Bachelor	160
Master	23
Doctoral	2
Total number of participants	185

Methodic

The research was conducted in an online form (using google docs) and anonymously. The following questionnaires were administrated:

1. STAI (State-Trait Anxiety Inventory, S-Anxiety scale; Spielberger, 2010). This questionnaire was used to assess state anxiety level and consists of 20 items scored on a Likert scale from 1 (not at all) to 4 (very much so). These statements include, for example, "I am relaxed" or "I am presently worrying over possible misfortunes".

2. Author's questionnaire to assess students' experience with distance learning. The questionnaire consisted of 27 multiple choice questions. The questions aimed assessing students' satisfaction of distance learning, motivation level, experiences and difficulties that they encountered. It included questions like: "How did you adapt to the new conditions of distance learning?", "Is it convenient for you to study remotely?", "Are you satisfied with the distance learning process?", "How do you evaluate the work of the teaching staff in the framework of distance learning?", "Would you like to continue studying at a university remotely in the future?" and others.

Statistical Analysis

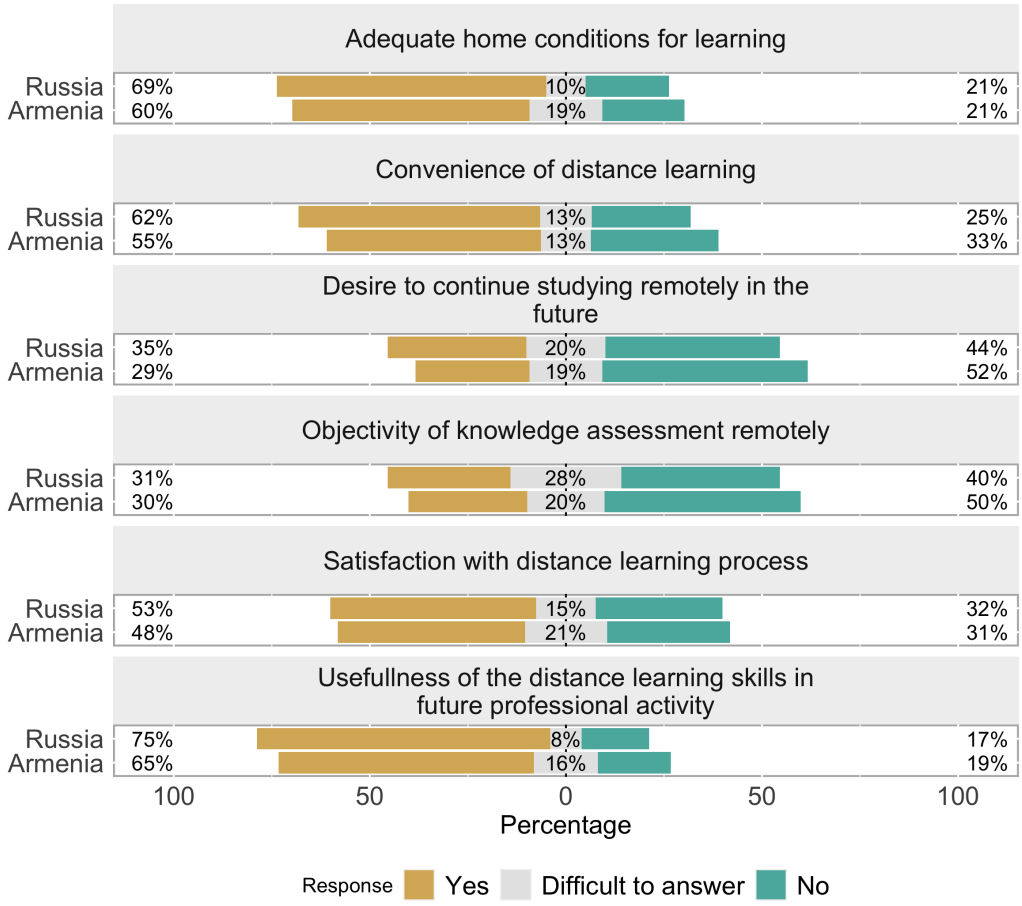
All statistical analysis described in this paper was performed in R (R Development Core team, 2021). To explore the relationship between continuous variable (state anxiety level) and its predictors (adaptation and satisfaction) we fitted linear models (*lm* function). To explore the relationship between categorical variables (evaluation of effectiveness of distance learning and evaluation of teacher's and student's work; adaptation to distance learning and preferred form of education per country of residence) Pearson chi-squared test was calculated (*chisq.test* function).

Results

Assessment of Overall Experience in Distance Learning

The results on several items of author's questionnaire were combined and displayed in Figure 1. These items describe students' overall experience with distance learning depending on the country of residence (Armenia and Russia). Overall, both ethnic Armenians and Russians tend to have positive experiences related to distance learning. This includes, for example, high satisfaction with distance learning (53% of Russian participants and 48 % of Armenian participants). Additionally, most participants had adequate conditions at home to be able to follow distance learning (69% of Russian participants and 60 % of Armenian participants). Despite those positive experiences, majority of participants indicated no desire to continue studying at the university remotely (44% of Russian participants and 52% of Armenian participants). Another important question is that students did not feel that the distance format allowed teachers to objectively assess their knowledge (40% of Russian participants and 50% of Armenian participants).

Figure 1
The overall experience in distance learning



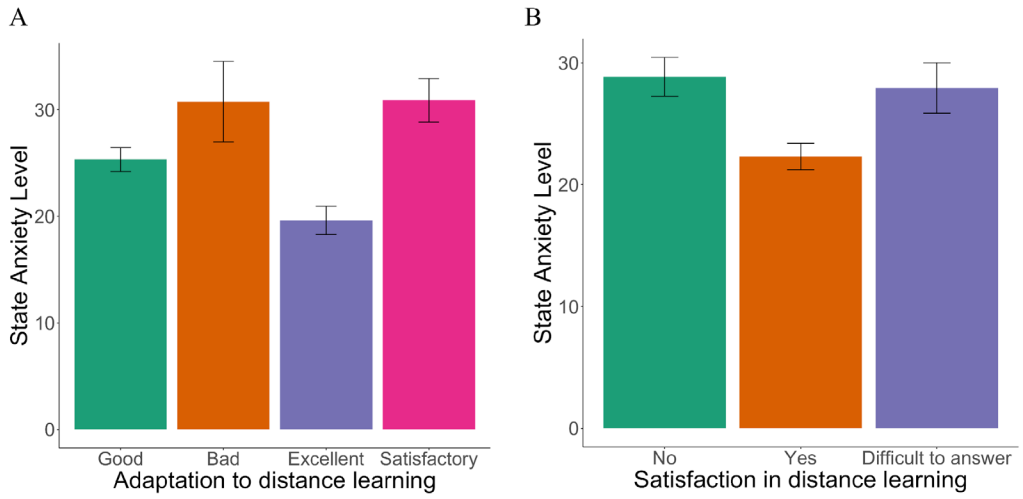
Is There a Relationship Between Assessment of Distance Learning and the State Anxiety Level?

The state anxiety level assessed by the State-Trait Anxiety Inventory for adults (Spielberger, 2010) was compared to the adaptation level assessed by the author's questionnaire. Mean values along with standard errors (Morey, 2008) were visually inspected (Figure 2A). Additionally, mean state anxiety was inspected along with the satisfaction assessment from distance learning (Figure 2B).

To statistically assess whether there is a relation between the state anxiety level and adaptation and satisfaction from distance learning, we fitted linear models. For most levels of adaptation as a predictor of state anxiety level, we observed statistically significant predictions (see reference "Excellent" and "Good", Table 2). Thus, people with excellent

adaptation were characterized by low state anxiety level (on average 19.66). The anxiety level was significantly higher for participants with good adaptation by 5.81 and with bad and satisfactory adaptation by 11.11, consequently. Moreover, for bad compared to good adaptation there was a slight nonsignificant difference and compared to satisfactory adaptation there was no difference (0).

Figure 2
The mean values and standard errors



Note. *A. The mean values and standard errors of state anxiety level for different types of adaptation to distance learning. B. The mean values of state anxiety level and standard errors for different types of satisfaction from distance learning.*

Table 2
The LM results for state anxiety as dependent variable and adaptation as a predictor

Formula	State anxiety ~ Adaptation to distance learning		
Reference: Excellent	Estimate	t value	p-value
Intercept	19.61	12.87	<0.001***
Bad	11.15	3.27	<0.01**
Good	5.73	2.91	<0.01**
Satisfactory	11.29	4.99	<0.001***

Reference: Bad

Formula	State anxiety ~ Adaptation to distance learning		
Reference: Excellent	Estimate	t value	p-value
Intercept	30.77	10.10	<0.001***
Good	-5.42	-1.64	0.10
Satisfactory	0.13	0.04	0.97
Reference: Good			
Intercept	25.35	20.25	<0.001***
Satisfactory	5.56	2.66	<0.01**

For most levels of satisfaction from distance learning as a predictor of state anxiety level, we observed statistically significant predictions (see Table 3 for overview of all comparisons). Participants satisfied from distance learning were on average less anxious (mean = 22.48) than the ones that were not satisfied (mean = 28.86) and that were hesitating to answer (mean = 27.94). There was no significant difference in state anxiety level between participants satisfied from distance learning and the ones that were hesitating.

Table 3
The LM results for state anxiety as dependent variable and satisfaction as a predictor

Formula	State anxiety ~ Satisfaction from distance learning		
Reference: Yes	Estimate	t value	p-value
Intercept	22.32	18.96	<0.001***
Difficult to answer	5.62	2.44	<0.05*
No	6.54	3.46	<0.001***
Reference: No			
Intercept	28.86	19.53	<0.001***
Difficult to answer	-0.92	-0.37	0.71

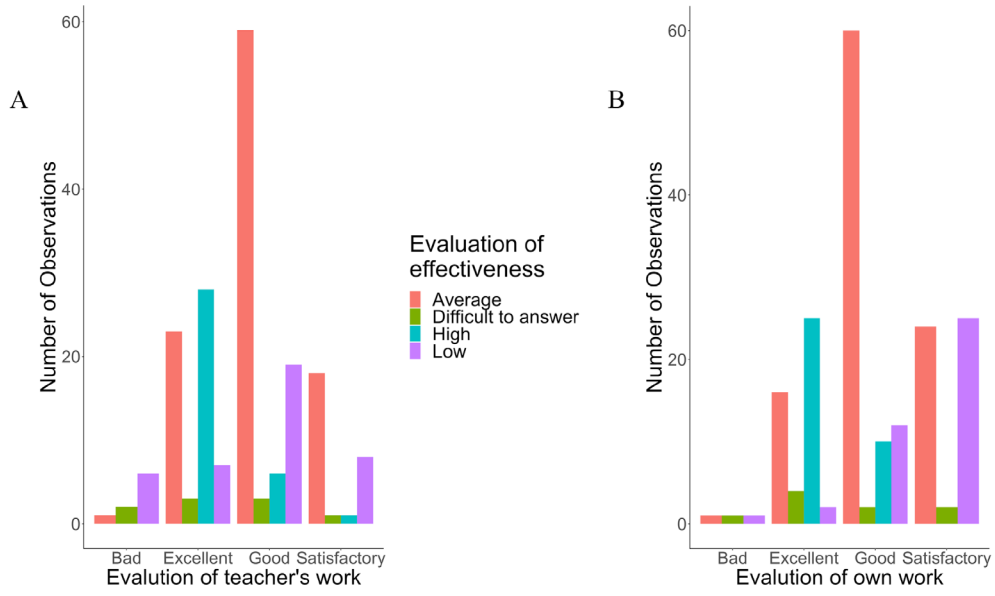
What Are the Determinants of Evaluation of Effectiveness of Distance

Learning?

We compared the evaluation of effectiveness of distance learning to a) evaluation of teacher's work and b) evaluation of students' own work both assessed by the author's questionnaire. Mean values along with standard errors (Morey, 2008) were visually inspected (Figure 3). To evaluate these relationships statistically we calculated Pearson chi-squared test. We found that there is a relationship between the evaluation of effectiveness of distance learning and the evaluation of teacher's work (X-squared = 62.89, df = 9, p-value <0.001). Next, to assess the strength of this relationship, we calculated Cramer's V that resulted in a moderate association value (V = 0.33).

Pearson chi-squared test also showed that there is a relationship between the evaluation of effectiveness of distance learning and the evaluation of own work (X-squared = 84.34, df = 9, p-value <0.001). Additionally, Cramer's V resulted in a moderate association value (V = 0.39). Overall, this shows two import factors that influence the effectivity of distance learning: teacher's work and student's own work.

Figure 3
The mean values and standard errors



Note. *A. The mean values and standard errors of evaluation of effectiveness linked to evaluation of teacher's work. B. The mean values and standard errors of evaluation of effectiveness linked to evaluation of students' own work.*

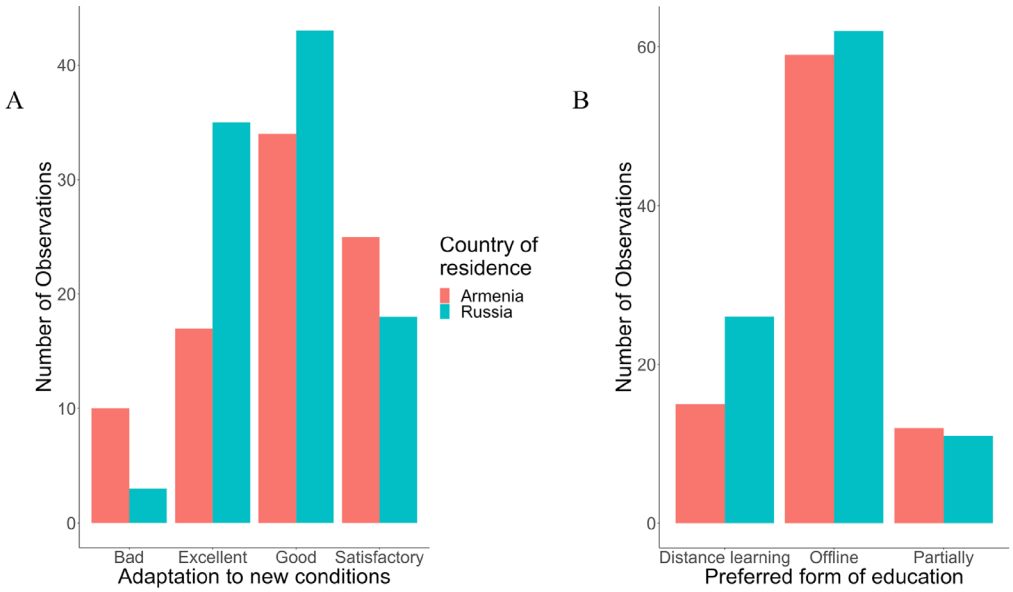
Does Adaptation to Distance Learning and Its Preference Depend on the Country of Residence?

To evaluate an influence of country to the adaptation to distance learning, we first visually inspected them (Figure 4 A). To evaluate these relationships statistically we calculated Pearson chi-squared test. We found that there is a relationship between the adaptation to distance learning and the country of residence (X-squared = 12.93, df = 6, p-value <0.05). Next, to assess the strength of this relationship, we calculated Cramer's V that resulted in a moderate association value (V = 0.25).

To evaluate an influence of country on the preferred form of education, we also visually inspected them (Figure 4 B). Pearson chi-squared test showed no relationship between the preferred form of education and the country of residence (X-squared = 2.62, df = 4, p-value > 0.05).

To summarize, this shows that the adaptation to distance learning was determined by country of residence, namely, Russians had on average higher adaptation to new conditions of distance learning during pandemic than Armenians. Additionally, there was no difference in preferred form of education, namely, most participants in most groups preferred offline (in-person) form of education.

Figure 4
The mean values and standard errors



Note. *A. The mean values and standard errors of adaptation to new conditions per country. B. The mean values and standard errors of preferred form of education per country.*

Discussion

The current paper aimed to investigate the transition to distance learning that occurred due to recent Covid-19 pandemic on on example of Armenian and Russian students. We discussed the definition of distance learning and the core theoretical approaches that clarify its specific goals, advantages and disadvantages. Analyzing various research sources, despite some disagreements, we notice the unanimity of researchers across the main features of distance education. First of all, this concerns flexibility, i.e., students' ability to study anytime, anywhere and at any time rhythm (Oliveira, Penedo, & Pereira, 2018). Another two important features are asynchrony, i.e., when teaching takes place according to a schedule or schedule agreed upon by students and teacher, regardless of time and economic efficiency. Thus, the evidence suggests that distance learning requires less financial costs than traditional forms of education (Rumble, 1987).

Moreover, not only student's role is discussed in the literature but also teacher's perspective (Offir, Barth, Lev, & Shteinbok, 2003; Sikwibele & Mungoo, 2009). This includes the role of the teacher, who is responsible for the functions of coordinating the learning process, correcting the course being taught, advising the course for individual learning, managing learning projects, etc. Additionally, the education process is modernized and includes the need for teaches to use special technologies and teaching aids: distance learning technology acts as a set of methods, forms and means of interaction with the student in the process of independent study, but under the control of the student's assimilation of a certain amount of knowledge (Sherry, 1995; Williams, McIntosh, & Russell, 2021).

To better understand overall experience with distance learning in ethnic Armenians and Russians we investigated this with our questionnaire. We found overall positive experiences concerning distance learning including high satisfaction, adequate home conditions, convenience of distance learning and usefulness of the distance learning skills in future professional activity. Our findings add to body of literature on analysis of transition to distance learning during Covid-19 (Armstrong-Mensah et al., 2020; Churiyah, Sholikhan, Filianti, & Sakdiyyah, 2020; Danchikov et al., 2021; Poluekhtova, Vikhrova, & Vartanova, 2020). While the mentioned studies investigated this transfer in various groups, to our knowledge, this is the first study to investigate this transfer on both Armenian and Russian students.

Despite those positive experiences, majority of participants in both groups did not want to continue study remotely and were doubting the possibility of objective evaluation of their knowledge by teachers in the context of distance learning. This clearly shows that distance learning for the student has both positive and negative sides (for review, see Oliveira, Penedo, & Pereira, 2018). Since there is no direct contact in distance learning, it becomes necessary to pay special attention to the psychological characteristics of the organization of training, which to a greater extent affect the effectiveness and quality of educational activities. Additionally, in distance learning, there is an excessive need in discipline of students.

Based on our theoretical analysis, we formulated three hypothetical assumptions that were tested using visual inspection complemented with statistical analysis. To this end, we assessed whether there is a relationship between adaptation and satisfaction with distance learning and the state anxiety level. Our results showed statistically significant differences in the levels of adaptation and the state anxiety value, namely, participants with higher adaptation were characterized with lower state anxiety value. Additionally, we found statistically significant differences in the levels of satisfaction and the state anxiety value, namely, participants that were satisfied with distance learning were characterized with lower state anxiety value. Overall, this shows an important source of state anxiety that is a low adaptation to emerging conditions of distance learning due to Covid-19 pandemic. This is consistent with the previous findings that showed high anxiety level to be related to challenges of distance learning (Demetriou et al., 2021; Savitsky, Findling, Ereli, & Hendel, 2020; Unger & Meiran, 2020).

Next, we investigated the components of effectivity of distance learning, i.e., evaluation of teachers' work and students' work. Consistent with our hypothesis, both had an equal influence on evaluation of effectiveness of distance learning. The third hypothetical assumption regarding an influence of residence country on adaptation to distance learning and the preferred form of education was partially confirmed. Thus, we found a relationship between the adaptation to distance learning and the country of residence with higher adaptation level in Russian students. Due to the fact that the adaptation level was linked earlier in this paper to the anxiety level, we could link this lower adaptation level in Armenians to their high anxiety value. In the previous work, the higher anxiety level found in Armenians than in Russians was interpreted as a result of an unexamined trauma of the Armenian Genocide (Berberyan & Berberyan, 2016).

However, we found no relationship between preferred form of education and the country of residence while most participants in both groups gave their preference to in-person education, when possible. We explain this finding due to the fact that educational system of Armenia is very close in value-semantic characteristics to the educational system of Russia, which has absorbed Orthodox values, which for centuries have been its spiritual and moral foundations. During the development of the educational system until the beginning of the twentieth century, the Christian worldview, which is based on Christian values, enriched the axiological content of education.

Conclusion

To summarize, conducting a comprehensive analysis of the essence of distance learning and education clearly shows the multidimensionality and difficulty of this phenomenon, that this problem has not been sufficiently studied in the Russian and Armenian spheres of education, but is very relevant today's reality. Moreover, distance learning methods, based on modern technological advances, covering a large area, have a huge role in vocational education at various levels.

While the majority of our participants, both in Armenian and Russian groups, were satisfied with distance learning and found it convenient, they expressed some disadvantages of it, namely, the difficulty of the objective assessment of their knowledge in distance learning context. Additionally, we found a relationship between the anxiety level and students' experience with distance learning. While we found differences in the adaptation level depending on the country of residence, no differences were found in the preferred form of education.

Limitations

While our study provided important insights on perception of distance learning in Armenian and Russian students, it would be of interest to conduct a similar survey with teachers. This would enrich understanding of distance learning satisfaction and would allow to compare the evaluations of students' work from perspective of both students and teachers. Thus, further research with the comparable sample of Armenian and Russian teachers is needed.

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Conflict of Interest Information

The authors have no conflicts of interest to declare.