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Associations Between Visions of the Future and Educational Outcomes of Young Adults

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Abstract
Introduction. This study aims to examine the association between young adults' visions of their own future and their Unified State Examination (USE) scores. The present study is the first to detail this vision and define the meaning-based content of young adults' visions of the future and self-assessments of their existing achievements in comparison with the expected ones. **Methods**. The study was conducted in two stages with a 2.5-year interval. In the first stage, the Me in 5 Years inventory was used on a sample of 1538 male and female young adults aged 14–28 years. In the second stage, 150 subjects of those who participated in the first stage of experiment answered questions about their USE results, about their own achievements, which they assumed in descriptions at the first stage, and about the reasons for poor performance. **Results**. To reach high levels of academic performance, modern young adults need to have a vision of their lives, in the context of their knowledge and what they can do on their own. There is a significant correlation between young adults' self-assessments of their own achievements and the USE scores. Young adults with low elective USE scores indicate that they achieved their plans earlier than planned. Young adults' confidence that everything they planned for the near future may really happen but later than expected is associated with average USE scores in compulsory subjects. **Discussion**. The USE represents a kind of systematization of plans for young adults with average USE scores in compulsory subjects. Those who are less successful in passing the USE in elective subjects have no clear life goals and cannot objectively assess their achievability.

Keywords
youth, modern youth, generation Z, academic success, self-determination, Unified State Examination, USE result, life trajectory, life planning, future

Highlights
- In modern young adults' visions of their future, the meaning-based association created by the "I know" and "I will do" constructs enables them to reach high levels of academic performance.
- Young adults with 'excellent' scores in the elective USE assess the achievement of their plans lower than those who passed the elective USE worse.

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▹ Young adults' stubbornness in achieving their plans for the future is associated with average USE scores in core subjects.

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Introduction

The main idea we will discuss in this article is the assumption that academic success in youth directly depends on students' vision of their own future. Adhering to cultural-historical psychology, we take as an axiom the fact that the most important thing in the theory of development is the 'individual – society' relationship (Kravtsov & Kravtsova, 2020). For representatives of modern youth, relations with society are built mainly through educational institutions. Considering that 'youthful age' denotes the phase of transition from dependent childhood to independent and responsible adulthood (Vygotskii, 1983), we consider educational institutions as high school, secondary vocational education organizations, and universities, as well as entry into professional activity itself. The education system has changed little since P. Ya. Galperin, who noted that it is built on the principle of 'spontaneous learning', where students master actions by making unsystematic trial and error, which is a universal and, at the same time, primitive method of cognizing reality (Kravtsov & Kravtsova, 2020). Success in such a system is measured on a scale of 'excellent student – unsuccessful student', which is ineffective in the changed social reality.

In general, the social structure seemed simple and inviolable a few decades ago. However, it is currently transformed under the influence of increased individualization, economic instability, and the rapid transformation of digital technologies (Polivanova, 2012; Arnett, 2016). All this considerably affects modern young adults, called Generation Z (Bogacheva & Sivak, 2019; Radaev, 2020a, 2020b; Yanitskii et al., 2019; Schwartz et al., 2017). For this generation, Internet resources are an important source of socio-cultural development. They were the first ones who did not catch with the world without modern network technologies (Vorontsova & Ermolaev, 2016). Representatives of generation Z are well versed in information technology (Kulakova, 2018). In our opinion, these conclusions are not so unequivocal. Our observations show that representatives of generation Z demonstrate a spacious mind, relying on numerous information streams, which does not allow them to concentrate on a deep study of information. At the same time, the information is contradictory and sometimes unreliable, which can adversely affect the formation of life prospects. In this regard, it can be difficult for them to independently choose the optimal life path that will lead to success.

The subject of modern research is often the relationship between academic success and the use of the Internet. It shows that those young adults who actively use the learning content of the Internet in their educational track have the greatest success in an educational institution. Thus, there is a correlation between a student's ability to win subject Olympiads and the content topics that such students are interested in the Vkontakte information space (Kashpur, Gubanov, Feshchenko, Izofatova, & Kobenko, 2020). Entertainment content has a direct influence on academic performance in schools. Modern studies have shown that this is confirmed in 83 % of cases. An analysis of the communities visited and viewed by young adults on the VKontakte

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predicts not only their gender (97 %) and age (98 %) but also their academic performance with high accuracy (Polivanova & Smirnov, 2017). From this, we can assume that the correct ratio of educating and developing content, as well as the presence of educating content that includes game functions, creates optimal conditions for sociocultural development and student-centred learning, in the absence of which education becomes more and more alienated from real life. But even in this context, the Internet can be considered as an important resource for modern young adults and not a determining factor in educational success.

Researchers studying the factors of success in learning at existing educational institutions distinguish among them the level of intelligence, readiness to choose a profession, the level of basic training (USE score), and personal characteristics, such as organization and conscientiousness, adaptive potential (Shaporov, 2020) with the formation of new approaches to the education of young adults.

Today, the result obtained at the Unified State Examination (USE) is the main indicator of the success of school education in the Russian Federation. In modern psychological research, personal characteristics of high scorers and those who are successful in further professional education are often studied. Thus, the research by Molotkov and Ryabchun (2019) indicates that a high level of the total USE score depends on general intelligence and volitional potential. At the same time, this study does not show the conditions that influence this volitional potential in young adults and to what extent it is a personal characteristic and/or the result of the increased demands of modern society. While preparing for the Unified State Examination, the low level of personal volitional qualities in young adults can subsequently lead to an insufficiently high level of success in higher professional education. Thus, the formed personal qualities have a direct impact on the effectiveness of preparation for USE and subsequent studies at the university. This refutes the arguments of several researchers that an exceptionally high USE score is important as an indicator of the further success of studying at a university (Dudik, 2016). We conclude that building an effective life trajectory based on higher education involves the formation of personal volitional qualities and a high level of training, confirmed by USE scores.

In the existential context, building a life trajectory means that an individual who builds his/her life path has decided on the ultimate meanings of life; in the social context, he/she has a vision of his/her own future social events and roles in various areas of life (family, career, education, and social life) (Zhilinskaya & Bochaver, 2018; Pichayayothin, 2014; Pinto, Faria, & do Céu Taveira, 2014; Habermas T. & Reese E., 2015). Readiness to choose a profession, professional self-determination, choice of life trajectory, and life planning are distinguished by the most important life objectives of young adults (Yaremchuk, Bakina, & Sityaeva, 2021; Klement'eva, 2019; Neyaskina & Pron'kina, 2017; Petrova, 2019). At the same time, imagining oneself in the future, including professional self-determination, includes not only knowledge and skills but also orientation in society, understanding the laws of the functioning of society, and openness to new experiences (Chesnokova, Churbanova, & Molchanov, 2019; Pinto et al., 2014; Egorenko, 2018; Adelman et al., 2017).

In general, visions of the future form a subjective image of human development. Belogai and Bugrova (2018) indicate that the concept of 'psychological future' is aimed at an individual's cognitive sphere and is associated with his/her attitude to the temporal aspect of his/her own life, while the past is the 'beginning' of objective time, and the future is the psychological 'beginning' of individual time. Individuals have no power over objective time, but they can freely structure their personal psychological time. The duration of the 'expected future' has a direct influence on the present of modern young adults. Unlike a child who sees the coming days and a teenager who

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already has a dream without a definite plan of action, young women and men make connections among the actions they need to take to achieve their goals (Lewin, 2000; Kauffman & Husman, 2004). Accordingly, the future is a psychological space in which the needs of the individual undergo cognitive processing into specific behavioural schemes based on personal volitional qualities.

In the process of developing the volitional potential of young adults, a significant role is played by external socially developed means that help them 'symbolically replace' a significant adult and act concerning themselves in his/her role, thereby forming a new 'psychological system' of a higher level, mastering their own behavior (Pavlenko, 2020). Based on this concept, we concluded that when preparing for the Unified State Examination, which is necessary for further higher education, it is important for young adults to form their own visions of the 'structure of personal psychological future' – when and what needs to be done, what steps lead to the goal, what resources are needed. If young adults realize in themselves the formation of 'psychological systems' that allow them to 'replace a significant adult', their inner need to pass the exam with a high score becomes a personal goal. We assumed that the performance of young adults, demonstrated by them in the Unified State Examination, depends on how they imagine their own future. Our theoretical analysis enabled us to identify the following main criteria for this relationship: (a) the conceptual meaning of young adults' visions of their own future demonstrates their educational outcomes; (b) self-assessments of existing achievements of young adults who demonstrate a high level of education performance, compared to the achievements they expected, indicate a 'long-expected future'.

Methods

This study aimed to analyze the relationship between young adults' visions of their own future and their USE scores. Our research was carried out in two stages. At the first stage (in 2018), using the Me in Five Years inventory by I. S. Kon (Kon, 1984), we identified the content-constituting elements of predicting the future of the study participants. We asked the participants to describe themselves as they see themselves in five years. We chose this time range to reveal a medium-term perspective that is not related to the challenges of the present. There were no restrictions on the amount of written text and the time to complete the task. The study sample consisted of 1538 male and female young adults aged 14–28 years. When forming the sample group, we sent an email invitation to participate in the study to educational organizations in Russia and asked to involve as many participants as possible. The study was conducted in any place convenient for respondents. They only needed their personal computers to link to an electronic resource. At the beginning of the study, respondents had to inform us about their consent to participate in the study and in the end – about their consent to the use of their personal data.

The texts of the essays obtained at the first stage and the answers to the questions were studied using an R-based software package. We studied the relationships among the most popular words used in the essays. Our analysis made it possible to extract information about the semantic similarity of particular words used in the essays. The significance of differences was assessed using the chi-square coefficient to test the discrepancy between empirical (observed) and theoretical (expected) frequencies for categorical data.

At the second stage (in 2021), we conducted an additional survey of the same young adults participated in the first stage. Via the e-mails indicated by the participants at the first stage of the study, we sent a link to the page containing a set of questions – personal data, the Unified State

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Examination results, assessment of their own achievements indicated in the letters to themselves at the first stage of the study, and the reasons for poor achievement. Additionally, we sent them the letters that they wrote about their future selves at the first stage of the study. In our study, only 10 % of the respondents of the first stage participated again, which was a good result. Therefore, at the second stage, the sample comprised of 150 individual participants aged 16 to 28 years. The significance of relationships was assessed using Fisher's exact test (significance level at 0.05).

Such study organization made it possible to compare the content of young adults' visions of the predicted future with their educational success.

Results

At the first stage of the study, we gained information about what words young adults most often use in their descriptions of the future, and how these words are related to each other. In total, 1538 essays contained 15988 words. Prepositions, proper names, numerals, and other words without semantic load were excluded from the substantive analysis. Figure 1 shows the repetitive word associations most often used by young adults in descriptions of their future.

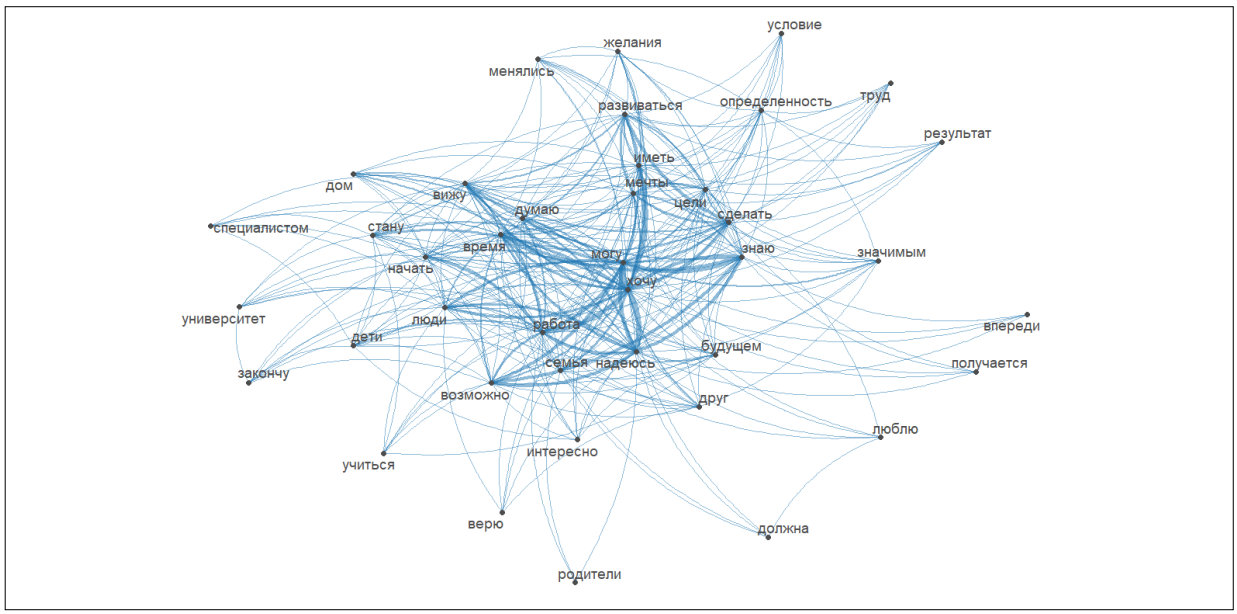

Figure 1. Associations of words used by young adults in descriptions of their future (N = 15988)[1]

1 университет – university; закончу – graduate; учиться – study; верю – believe; родители – parents; специалистом – specialist; дети – children; люди – people; возможно – possible; интересно – interesting; начать – begin; стану - will become; дом – home; вижу – see; время – time; думаю – think; работа – job; семья – family; надеюсь – hope; могу – can; хочу – want; менялись - were changing; желания – desires; развиваться – develop; иметь – have; мечты – dreams; цели – goals; сделать – will do; знаю – know; будущем – future; друг – friend; условие – condition; определенность – certainty; труд – labor; результат – result; значимым – important; впереди – ahead; люблю – love; должна – have to; получается – succeed.

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Language, including written one, is a tool for expressing thoughts. It is very flexible and difficult to formalize. Figure 1shows the results of the analysis of the number of meaning-based associations of different words in the participants' texts. The graph shows that the dependence is complex and non-linear and does not depend on the volume of the text, but rather on the characteristics of the authors. The figure makes it possible to select semantically close words and evaluate the measure of their sense proximity. That is, Figure 1 shows the content of the average representations of young adults about their own future. The following words were fixed in the center of the figure: "see", "can", "hope", "want", "do", "goals", "job", "know", "possible", and "will do". By the number of lines leading to them in the figure, we can conclude that they are most often involved in semantic connections between words that young adults use to describe their vision of the future.

At the second stage of the study, we distinguished the participants with 'excellent' USE scores in at least one subject (score range, 81–100). Thereafter, we compared the frequency of words identified as the focus of young young adults' visions of the future (Fig. 1), in general, by all the young adults who participated in the study, and those of them who were most successful in education (according to the USE scores). Among the essays of the study participants who had excellent USE scores in at least one subject (score range, 81–100), 53 essays contained 2480 words. Figure 2 shows the comparison of the frequency of occurrence of words in essays across the entire sample of young adults and in the essays of the study participants who had excellent USE scores in at least one subject (score range, 81–100).

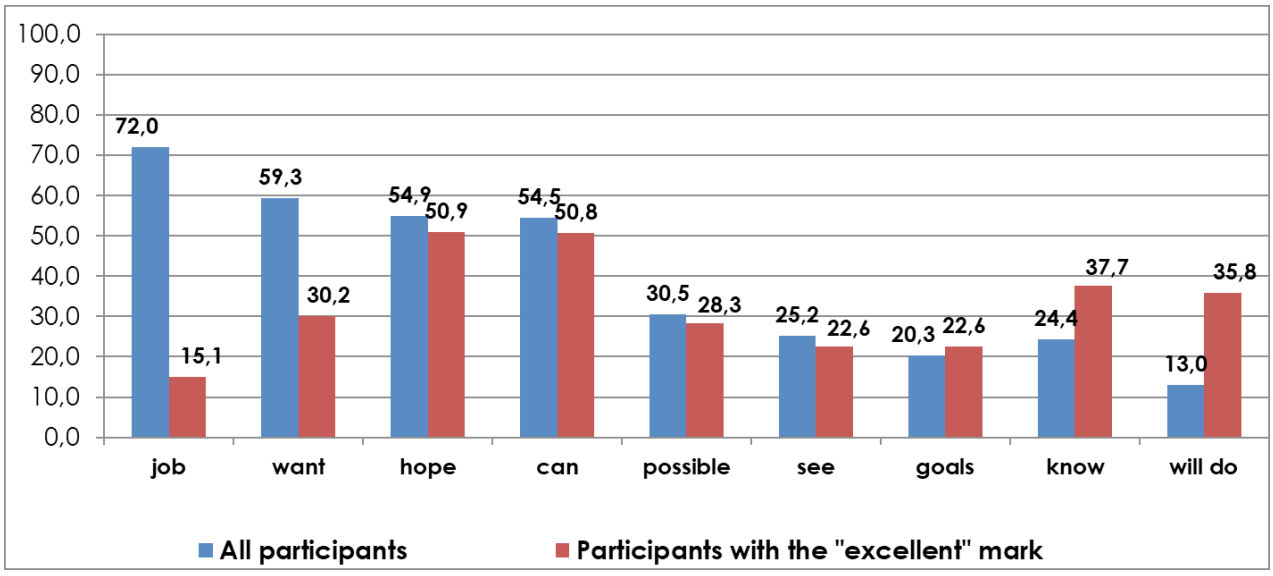

Figure 2. The word frequency, % (N = 1538)

The data presented in Figure 2, demonstrate that the visions of the future of the study participants who had excellent USE scores in at least one subject (score range, 81–100) differ greatly

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in terms of their use of the following four words: "job", "want", "know", and "do". Young adults who passed the exam with 'excellent' scores use the words "job" and "want" less often. At the same time, they use the words "do" and "know" more often. The significance of these differences is confirmed by the analysis carried out using the chi-square coefficient. For the word "want", the chi-square coefficient = 38.9, at a significance level of 0.00 (all cells have an expected count greater than 5, the minimum value is 19); for the word "job", chi-square coefficient = 104.65, at a significance level of 0.00 (all cells have an expected number greater than 5, the minimum value is 14); for the word "know", the chi-square coefficient = 5.63, at a significance level of 0.05 (all cells have an expected number greater than 5, the minimum value is 12); for the word "will do" chi-square coefficient = 28.63, at a significance level of 0.00 (all cells have an expected count greater than 5, the minimum value is 6).

In addition, at the second stage of the research, we found that the vision of the future and the USE scores are interconnected. In the framework of the discussion described in this article, the relationship between the USE scores and the assessment of the realization of individual plans is important.

In young adults' answers to the question of why something has not yet happened or is not happening from what the participants expected, we found significant relationships between respondents' statement that "I will have everything as I expected, but later than in five years" and the average scores obtained in the compulsory subjects USE (not excellent and not unsatisfactory scores).

Thus, young adults who had 'satisfactory' scores in the USE in mathematics (score range, 60–27) reconsider their plans. Among the answers to the question "If something has not happened yet and you put a mark of less than 10 in the previous question please answer why?" they tend to insist on their plans and choose the answer "I will have everything as I expected but later than in five years" (f = 0.0037). Young adults who had 'good' scores in the USE in the Russian language subject (score range, 80–61) reconsider their plans. Among the answers to the same question the tend to insist on their plans and choose the answer "I will have everything as I expected but later than in five years" (f = 0.0387).

Table 1 presents significant associations between the USE scores and the answers to the following question: "In the 2018 research, you described how you see yourself in five years. About half of that time has passed. Please, using a 10-point scale, rate whether everything turned out the way you expected, where 10 points mean that everything worked out, and 0 means nothing happened".

Table 1

Associations between the Unified State Exam scores in elective subjects and respondents' satisfaction with their achievements (N = 150)

USE scores	Assessment of satisfaction with achievements, 10-point scale	Fisher's exact test
Score range, 100–81	4	0,01486

Table 1

Associations between the Unified State Exam scores in elective subjects and respondents' satisfaction with their achievements (N = 150)

USE scores	Assessment of satisfaction with achievements, 10-point scale	Fisher's exact test
Score range, 80–61	6	0,002799
Score range, 60–27	10	0,04762
Score range, 26–0	9	0,04659

Accordingly, young adults who had 'excellent' scores in the elective USE (score range, 100–81) assess the achievement of their plans lower than those who passed the elective USE worse. Young adults who had low scores in the elective USE indicated that they carried out their plans in half the period they planned. One of the typical comments of a female respondent who had an 'excellent' score in the elective USE was the following statement: "I have become smarter and more mature – that is for sure. Believe it or not, I go in for sports every day (well, almost every day). I am going to become a linguist, although it is still not journalism. I lost a couple of years in the other direction, but it is still an experience, and I do not want to worry about it. I realized that money is really important. I still love the "black" style, but I am also keenly interested in punk and, at the same time, something gentle. I try. I think so". Meanwhile, one of the typical comments of a male respondent who had a lowest score (score range, 26–0) in the elective USE was the following statement: "I did not succeed with the planned university..."

Discussion

For young adults, it is important to build a life trajectory, individual future socially determined events, social roles, and individual life (Chesnokova et al., 2019; Klement'eva, 2019; Belogai & Bugrova, 2018; Neyaskina & Pron'kina, 2017; Petrova, 2019; Zhilinskaya & Bochaver, 2018). Therefore, we studied young adults' visions of their future. Our findings indicate that when describing themselves in the future, young adults most often use the following words: "see", "can", "hope", "want", "do", "goals", "job", "know", and "possible". Based on the cultural-historical concept described by L. S. Vygotskii (Vygotskii, 1983), we explored the meanings of the keywords that indicate how young adults build their own lives. The semantic analysis of the questions about the origin of word meanings, their associations with thinking, social and cultural characteristics of a native speaker, has shown the following:

1. Etymologically, the word "see" suggests vision. However, in connection with the words "can", "know" and "want", it means "I see what I want", "I see what I can", and "I see what I know". Such a vision of the future, first of all, helps young adults understand themselves.
2. The words "goals" and "job" are those socially developed means that, according to V. N. Pavlenko, enable young adults form a new 'psychological system' (Pavlenko, 2020) of

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their own psychological future by means of interiorization. That is, an adolescent assimilates the vision of a future life through the adults around him/her, which represents the thesis "the purpose of life is to find a job".

3. The words "hope" and "possible" appear as a direction of actions in the supposed future of young adults. Considering that future is a psychological "beginning" of individual time (Lewin, 2000), these words characterize the uncertainty in actions of young adults.
4. In the existential context, building a life trajectory means that an individual who designs his/her own life has definite fundamental life meanings. In this context, the words "know" and "will do" indicate respondents' confidence in their own future.

In more than 70 % of cases, the word "job" is the central content of the future life stories of young adults participating in the study. At the same time, in the essays of young adults who had 'excellent' scores in the elective USE, the word "job" was found only in 15 % of the essays. There are also significant differences in the use of the word "want". Young adults, who had 'excellent' scores in the elective USE, used it much less frequently. However, young adults, who had 'excellent' scores in the elective USE, used the words "know" and "will do" significantly more often than other study participants. That is, in order to achieve success in USE, modern young adults need to have a visions of their own lives, but not in the mode of the questions of surrounding adults ("What specialty do you plan to work in?"), but in terms of their own knowledge of what they can do on their own. Therefore, the meaning-based association of the words "know" and "will do" allows young adults to achieve significant educational success.

Thus, the USE scores in core subjects are interconnected with perseverance in achieving plans for the future. "Satisfactory" scores in mathematics and "good" scores in the Russian language subject are associated with young adults' belief that "if something planned did not happen, it would definitely happen, but later than expected". Accordingly, passing the compulsory part of the USE with average scores provokes young adults to increase "the distance of their expected future" (Lewin, 2000). Our data allow us to make a preliminary conclusion that for such young adults, the USE acts as a kind of systematization of their plans – leaving a school that is built on the principle of 'spontaneous learning' (Kravtsov & Kravtsova, 2020), they face with a clear USE structure and organization. These results are consistent with the notion that a high overall score in the USE generally makes it possible to predict future high achievements upon graduation (Dudik, 2016). Moreover, they show that average scores in the USE help analyze individual life trajectory and adjust it further.

Elective USE scores are associated with respondents' assessments of the achievement of their future plans. Young adults, who had 'excellent' scores in the elective USE, assessed the achievement of their plans lower than those who had lower scores in the elective USE. Young adults who had low scores in the elective USE indicate that they reached their goals earlier than they indicated in their essays. Such underestimation of their capabilities is explained by the lack of clear criteria for the desired future. This allows them to underestimate the requirements for themselves, as well as for the necessary level of training and knowledge to achieve stated goals.

In the process of vocational education, the longer the period of time for which young adults see themselves in the future determine their higher readiness to get educated at a higher level (Yaroshevskaya & Sysoeva, 2021; Lukina & Solov'eva, 2019). Such conclusions were demonstrated by N. L. Lukina and E. A. Solov'eva in their analysis of the relationship between plans for future

and the level of vocational education. Thus, a distance of "expected future" has a direct impact on the present of modern young adults. Unlike children, young adults build connections between the actions necessary to achieve their own plans (Lewin, 2000). In this context, our data demonstrate that young adults who are less successful in the USE have no clear life plans and cannot objectively assess their achievability. Figuratively, this can be formulated as "having not achieved what they wanted, they pretended that they wanted what they had achieved". Therefore, young adults who objectively see the prospect of their future life can better organize their educational activities when preparing for exams and score higher on the USE.

Conclusion

In the study, we obtained the data that characterize the relationship between educational outcomes and visions of the future of young adults. The meaning-based association created by the words "know" and "will" allows young adults to achieve significant educational results.

Educational outcomes in the compulsory subject areas are interconnected at the intermediate level with the revision of individual life trajectory and perseverance in achieving individual plans for the future. Educational outcomes in elective subject areas are associated with assessments of the achievement of individual plans for the future. Young adults, who had 'excellent' scores in the elective USE, assess the achievement of their plans to a lesser extent. In their visions, the distance of the 'expected future' is considerably longer than in the visions of those who had lower scores in the elective USE. Young adults who had 'unsatisfactory' scores in the elective USE cannot objectively assess the achievability of their life plans.

The findings of this study can become the basis for further research that was not included in the pool of issues discussed in the article. In particular, the use of social media and Internet resources in the formation of visions of the future remained outside the scope of this study.

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