

The Relationship of Time Perspective and Subjective Perceptions of Students as the Empirical Base for Individualization of the Educational Path

Dmitry P. Zavodchikov^a, Anton A. Sharov^a, Olga F. Chistik^b, Ivan V. Larionov^c and Olga A. Naumova^b

^aRussian State Vocational Pedagogical University, RUSSIA; ^bSamara State University of Economics, RUSSIA; ^cSamara State Technical University, RUSSIA

ABSTRACT

The significance of the investigated problem is stipulated by the need in practicing individualization of vocational educational process in the continuing education and lack of scientific and methodological support of its accompaniment. The purpose of the article is to substantiate the subjective perceptions and temporal perspective as the empirical bases of individualization of vocational and educational process. The leading method of research of this problem is a questionnaire that allows to identify the level of demonstration time perspectives (adapted technique ZTPI) and differentiate subjective judgments about the system of vocational education, professional self-determination process (questionnaire). The results of empirical study of time perspective, the subjective perception of vocational education and retrospective-prospective (forward-looking) aspects of professional self-determination, as well as their relationship with students are presented and discussed in the article. The results can be taken into account in the scientific and methodological support of individualization of vocational and educational process and in applied methods of formation of individual educational paths in vocational education.

KEYWORDS

Individual educational paths; professional self-determination; subjective perceptions; time perspective

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Introduction

There is no doubt that the regulatory framework for the individualization of vocational and educational path in the system of continuing education in practice is not yet ready to service professional and educational interests of the personality. Despite the fact that the system of continuous education has been discussed since 70-ies of the previous century, its main function was viewed as to ensure the continuity of different forms and types of education (Vladislavlev, 1978; Gorokhov et al., 1987; Zinchenko, 1990; Zakirova, Masalimova &

CORRESPONDENCE Dmitry P. Zavodchikov ✉ zavodchikov_d@mail.ru

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Nikoghosyan, 2016). The national general and vocational education system evolved exactly in that direction. But in many ways, globalization has forced to revise academic mobility as a simple development of the successive programs of different educational institutions. Despite the fact that the unification of the results of the educational process and procedures required, and designed to ensure the quality and continuity of education, its content is also becoming more variable, creating the preconditions for a dynamically changing skills due to current and projected needs of the society and individuals. Thus, the regulatory framework governing the processes of education, is not ready for such a large scale of variation, although the need of the society is constantly increasing.

The suppositions for the systemic solution of this problem is the idea that the theoretical and methodological basis of Psychology and Pedagogy has grown into explanation of vocational and educational needs of the people from the basis of the general principles of development, to interpret them in the context of life and to solve specific problems of development that integrates in the prognostic logic as social and individual problems (Malinetskii, 2009) and self-organizing society (Haken, 2007). But the practice of psychological assistance remains largely unclaimed, in spite of the methods developed. It is not only time, effort and conditions for its implementation consuming, but also requires efforts from the person who feels the need, but does not evaluate the challenge of professional development and career as a strategic goal of life. People are turning to professionals in situations of difficulty or crisis, solving actual problems, but not systemic and strategic, which have life and social significance. It is obvious that the real social and economic effects as a result of facilitating the solution of problems in this way will have to measure and prove the practice of continuous education. This requires not only a high practical competence, but also research approaches and skills of psychologists working in the field of vocational guidance, vocational counseling and related fields.

From the standpoint of the organization of modern society and the state, high professional qualifications, particularly in the areas of ensuring progress is not only the product of a long formation, but also the efforts invested in identifying and supporting capable individuals. State, returning to education, assumes this function (grants, scholarships, awards, etc.), socially responsible business will not remain on the sidelines. Ideally, however, the very organization of the continuing education system must play the need of the individual to grow beyond their own professional competence, even at the cost of some effort. This requires not only the awareness of the public necessity, but also an ideology, as well as the relevant information and technological support of social processes of human involvement in the labor and professional spheres.

And finally, the personal element, and this is one of the most important positions in our opinion, lies in the fact that individualization of vocational and educational paths normatively and institutionally should be relevant to perception of the subjects of vocational educational process. The dissonance between expectations and reality for the vast majority is determined on the principle of minimizing of the psychological costs, which often turns out to be a failure to act contrary to the circumstances or passive inaction. A significant attitude on certain behavior in professional and social terms is also formed in conjunction with a time perspective of the personality (Zimbardo & Boyd, 2010).

An empirical study of subjective perception could in practical direction play the role of psychological support and assistance in forecasting and managing their own vocational and educational path in continuing education. Perhaps there is already completed practical modalities of such cooperation, some traditional educational systems (tutoring, mentoring, scientific supervising, etc.), but the results of empirical research would help to catch the educational paths of individualization of educational trends based on subjective perceptions and attitudes in professionalization.

Materials and Methods

Methods of research

The following methods were used in research: theoretical (analysis, synthesis, concretization, generalization); methods of obtaining empirical data (questionnaire designed to obtain opinions about different aspects of the vocational education system, retrospective and prospective (prognostic) professional choice assessments; ZTPI technique (Zimbardo Time Perspective Inventory) modified by A. Syrtsova et al. (2008); methods of mathematical statistics (analysis of frequency distributions by Chi-square test, one-sample Kolmogorov-Smirnov test, comparison criteria of Student test for independent samples and the Mann-Whitney test, one way ANOVA test) and graphic results.

The research trial resources

The research trial resources were based at Russian State Vocational Pedagogical University. The students of extra-mural department of psychological and pedagogical, and engineering training of Russian State Vocational Pedagogical University participated in the research: men (n = 90) and women (n = 117).

Research phases

Research into the problem was conducted in three phases:

- the first phase was focused on a theoretical analysis of the existing methodological approaches to the philosophical, psychological and pedagogical scientific literature, thesis on the issue; the problem was highlighted, the purpose and methods of research were determined in the process of empirical study;
- empirical study was carried out in the second phase, the findings obtained in the empirical part of the research were analyzed, tested and defined;
- in the third phase the empirical part of the research was completed, theoretical and practical conclusions were specified, results obtained were summarized and systematized.

Results

The differences in the performance of temporal perspective of male and female students

The students of the extra-mural department of the Russian State Professional Pedagogical University of psychological and pedagogical and engineering training were involved in the first phase of the study: men (n = 90) and women (n = 117). Empirical data were obtained using the ZTPI technique (Zimbardo &

Boyd, 2010) modified by A. Syrtsova et al. (2008). To compare expression of time perspectives for men and women, the distribution for normality was reviewed using one-sample Kolmogorov-Smirnov test (Table 1).

Table 1. Revision of time perspectives scale distribution for normality using one-sample Kolmogorov-Smirnov test (n=207)

Time perspectives indexes	Statistics Z Kolmogorov-Smirnov	P - asymptotic significance (bilateral)
Negative past	,924	,360
Hedonistic present	,861	,448
Future	,726	,667
Positive past	1,145	,145
Fatalistic present	,697	,717

As can be seen, neither of the time perspectives indicators reach statistical significance, respectively, the statistical distribution is not different from the normal, so the t-criteria of Student test for independent samples (Table 2) was used to compare the level of expression of temporal perspectives for both men and women.

Table 2. The results of t- criteria of Student test for comparison of independent samples for men (n = 90) and women (n = 117) according to the level of time perspectives expression

Time perspectives indexes	Levene's criteria of the equality of variances		The t-test of equality average			Average	
	F	p - significance	t	Degree of freedom df	p - significance (bilateral)	mail	female
Negative past	2,015	,157	-2,124	205	,035	2,54	2,77
Hedonistic present	1,243	,266	-3,624	205	,000	3,21	3,49
Future	,028	,868	-,272	205	,786	3,61	3,63
Positive past	,197	,657	-1,035	205	,302	3,71	3,79
Fatalistic present	,755	,386	-2,225	205	,027	2,46	2,67

As you can see, statistically significant, men and women differ in the scale of "negative past", women statistically have significantly higher indicators than men. Also, the differences are statistically significant on the scale of "hedonistic present" and "fatalistic present" indicators on both scales are also higher in women. Based on the content of the scale "negative past", we can say that on average, women are more prone to negative thinking associated with depression, anxiety, low levels of subjective happiness assessment, low self-esteem and aggression. According to research, there is also a negative association with emotional stability, conscientiousness and performance (Zimbardo & Boyd, 2010). "Hedonistic present" scale correlates with the lack of ego control, the search for new sensations, activity; and negatively correlates with preference for stability, conscientiousness and emotional stability (by questionnaire "Big Five"). Respondents with high scale "fatalistic present" have a hidden belief that the future is predetermined, and they are unable to influence it, it cannot be controlled; present should be endured with resignation and humility. Other

studies have revealed a strong correlation with aggression, anxiety and depression; negative correlation with taking into account the future consequences, activity, openness, conscientiousness and emotional stability. Correlations with constructs that reflect the orientation on the future were not revealed. (Zimbardo & Boyd, 2010).

It should be noted that these descriptions characterize the sample of women than men, but it is impossible to talk about the prevalence of varying perspectives on the basis of ZTPI data processing and comparison.

Subjective perceptions of vocational education and professional self-determination: a comparative analysis of men and women mindsets

The second phase of the study was carried out on the same sample - students of the extra-mural psychological and pedagogical and engineering training department of the Russian State Professional and Pedagogical University: men (n = 90) and women (n = 117). Empirical data were obtained using the developed questionnaire, the questions which were aimed at assessing perceptions of vocational education, professional self retrospection and self projection in the vocational education system. The logic of empirical verification and statistical inference for the comparison of subjective perceptions of men and women on the professional education is the following: the answers to the questions presented in nominal or ordinal scale, were processed using the Chi-square test. The problem of the frequency distributions according to equal samples of men and women was solved separately. Then, based on contingency tables and Chi-square test the empirical frequency distribution in men and women was compared. The results are presented in graphical form for most substantive issues and conclusions. Some questions in the questionnaire were considered as the metric scales. The test was conducted for them on the difference from the normal distribution using one-sample Kolmogorov-Smirnov criteria and relevant criterion of comparison was used.

For example, we are providing the full processing of one question from the questionnaire (Q4 is a scale of statistical program; 5 - the ordinal number of the question in the questionnaire) for the rest we are using results and graphical display. Table 3 presents the frequency distribution of the responses to the fifth question for the male sample.

Table 3. Empirical and theoretical equal frequency distribution of the choices in response to a survey question 5, "Are you planning to get a higher level education?" In the male sample (n = 90)

Responses	The observed N (empirical distribution)	Expected N (theoretically equal distribution)	Balance
1-yes	42	18,0	24,0
2 - probably yes	15	18,0	-3,0
3 - it's hard to say	15	18,0	-3,0
4 - probably no	7	18,0	-11,0
5 - no	11	18,0	-7,0
Total	90	90	0

Table 4 presents the estimated indexes of the chi-square test in response to a survey question 5 for a sample of men.

Table 4. Statistics of the chi-square test in the response to question 5 of the questionnaire "Are you planning to get a higher level education?" In the male sample (n = 90)

Statistics	Calculated values
Chi-square test	42,444 ^a
Degree of freedom df	4
asymptotic significance p	,001

Further, similar results of frequency distribution, and calculated values of the Chi-square test in the response to question 5 of the questionnaire are presented for women (Table 5 and 6).

Table 5. Empirical and theoretical equal frequency distribution of the choices in response to question 5 of the questionnaire, "Are you planning to get a higher level education?" In the female sample (n = 116)

Responses	The observed N (empirical distribution)	Expected N (theoretically equal distribution)	Balance
1 - yes	38	23,2	14,8
2 - probably yes	33	23,2	9,8
3 - it's hard to say	21	23,2	-2,2
4 - probably no	18	23,2	-5,2
5 - no	6	23,2	-17,2
Total	116	116	0

Table 6. Statistics of the Chi-square test in the response to question 5 of the questionnaire "Are you planning to get a higher level education?" In the female sample (n = 116)

Statistics	Calculated values
Chi-square test	27,707 ^a
Degree of freedom df	4
asymptotic significance p	,001

Thus, based on the Chi-square test statistics, we can see that both men and women distribution of intention to get an education of a higher level is different from the equal, based on the observation of N for each response we can conclude statistically significant prevalence in both samples for answers "yes" and "probably yes." Table 7 shows the frequency distribution for the comparison of the empirical distribution of responses for men and women. Calculated values of the chi-square test are presented in Table 8.

Table 7. Table of contingency (the empirical frequency distribution) to question 5 of the questionnaire "Are you planning to get a higher level education?" In the men (n = 90) and in the female sample (n = 116)

Indicators		Choice of responses					Total
		1-yes	2 - probably yes	3 - it's hard to say	4 - probably no	5 - no	
Gender	Men	42	15	15	7	11	90
	Women	38	33	21	18	6	116
Total		80	48	36	25	17	206

Table 8. Chi-square test statistics for comparing two empirical distributions in the answer to question 5 of the questionnaire "Are you planning to get a higher level education?" In men (n = 90) and in female sample (n = 116)

Indicators	Value	Degree of freedom df	asymptotic significance p
Chi-square test	11,157 ^a	4	,025

Thus, differences in the empirical distributions of responses to question 5 of the questionnaire in men and women are statistically significant. On the basis of the graphical representation, we can make a conclusion that women have a smooth decrease in the frequency of responses from complete confidence to failure in obtaining an education of a higher level, while in men the absolute confidence in the plans for education is dominated, and the remaining frequencies are presented more evenly.

The frequency distribution of responses to the question in men and women samples are presented graphically in the bar chart (Figure 1).

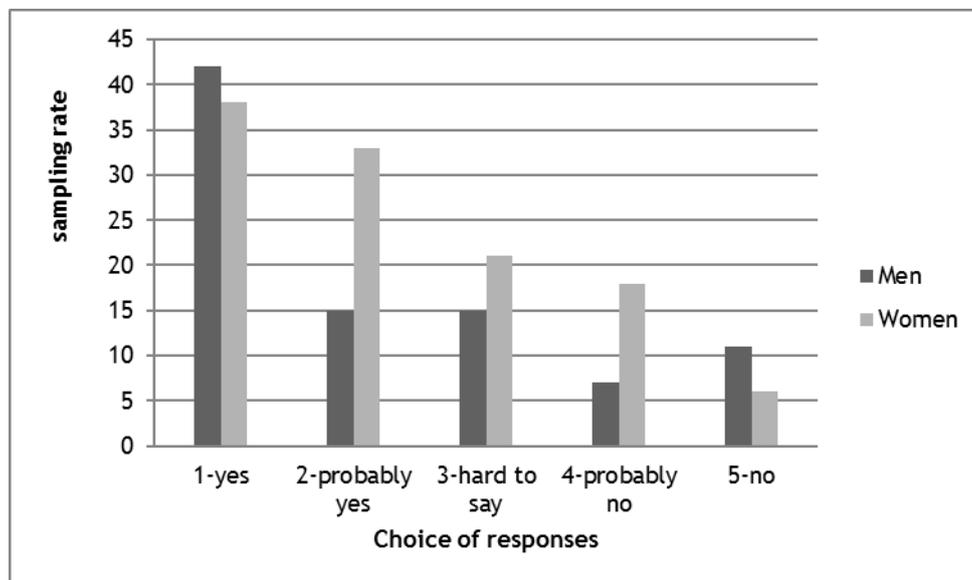


Figure 1. Histogram of frequency distribution of responses in men and women to the question 5 of questionnaire "Are you planning to get a higher level education?"

When answering the question "If you were to receive vocational training again, would you choose the educational institution, which you studied or study in now?" in men (n = 90) responses distribution differs from the equal ($X^2 = 59,3$; $r \leq 0,001$) and in women (n = 117) does not differ ($X^2 = 2,9$; $r \leq 0,565$). When comparing the two empirical distributions for men and women in the frequency of responses a statistically significant difference ($X^2 = 19,1$; $r \leq 0,001$) is revealed. Empirical frequency distribution of responses in a sample for men and women statistically is significantly different. Analyzing the histogram substantially (Figure 2) it should be noted that men retrospectively review attitude to the educational institution, which they studied or study in now and if they had to

choose the institution again a significantly large part of them would have changed it, while among women this trend is not observed.

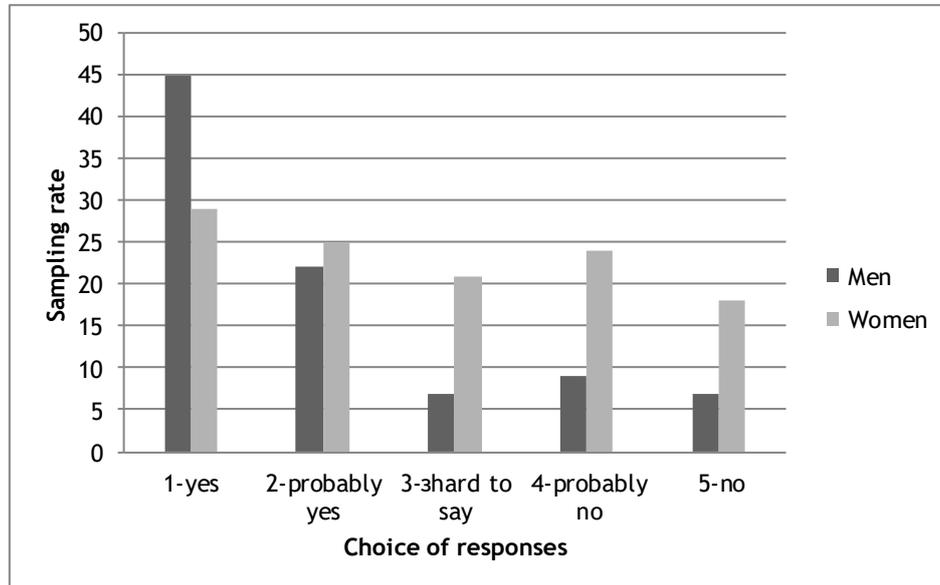


Figure 2. Histogram of frequency distribution of responses in men and women to the question 6 of the questionnaire "If you were to receive vocational training again, would you choose the educational institution, which you studied or study in now?"

Distribution of responses to the question about the change of professional activity significantly different from the equal both in women sample ($\chi^2 = 23,2$; $r \leq 0,001$) and in men ($\chi^2 = 108,3$; $r \leq 0,001$). Respectively, based on the observed frequency histograms (Figure 3), the majority of both men and women negatively assess the need for a change of professional activity.

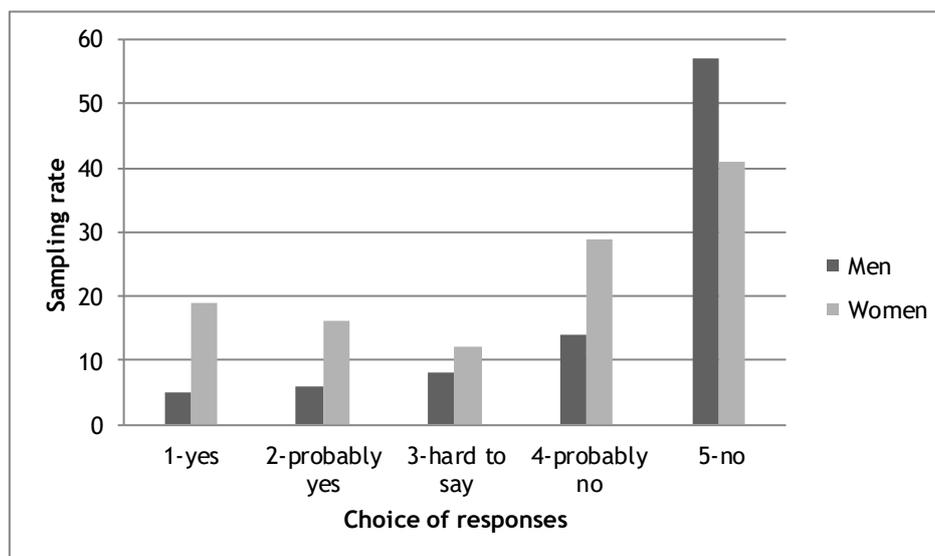


Figure 3. Histogram of frequency distribution of responses from men and women to question 7 of the questionnaire "Do you have a need for a change of professional activity?"

Comparing the empirical frequency distribution, it is possible to say that they are statistically different ($X^2 = 18,1$; $r \leq 0,001$). Respectively, meaningful, analyzing the histogram (Figure 3), it is possible to say that men are more categorical in their assessment of the need for a change of profession, while in women the distribution closer to equal, but it differs from it.

From Chi-square test we can conclude that both men ($X^2 = 15,4$; $r \leq 0,01$), and women ($X^2 = 34,7$; $r \leq 0,001$) frequency distribution of responses to the question about the need for further training or retraining is different from equal. Based on the observed frequencies in histogram (Figure 4), it is possible to say that extreme judgments dominate in men ("yes" or "no"), and positive assessment - in women ("yes" and "probably yes"). Statistically, the empirical distribution of the categories both in men and women to the question about further training or retraining differ ($X^2 = 9,7$; $p \leq 0,05$). As can be seen from the histogram, women assess the need for further training or retraining positively, which can be interpreted in two ways: either as a lack of confidence in their qualifications or flexibility in the acquisition and expansion of qualifications. Men have more categorical opinion (the frequency of responses "yes" and "no" more than others).

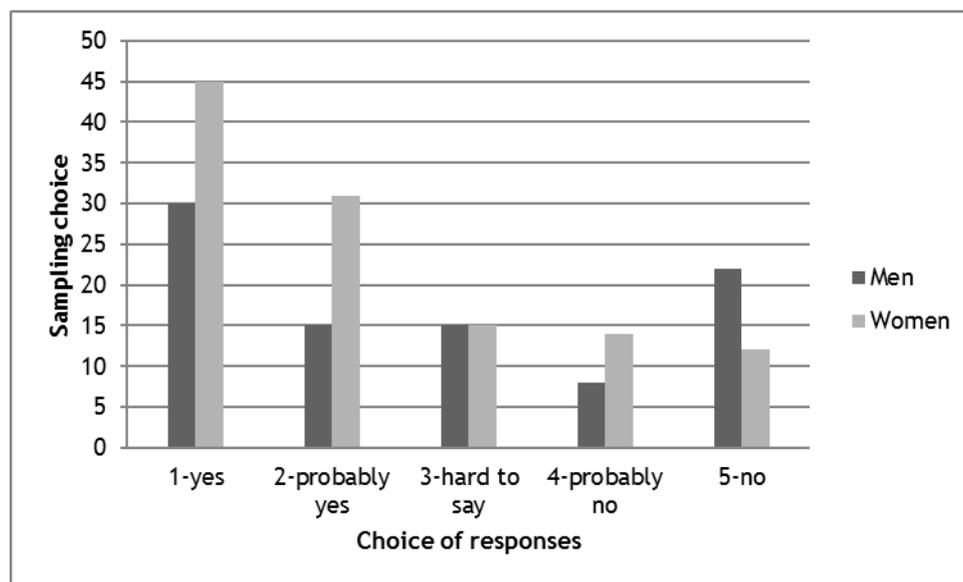


Figure 4. Histogram of frequency distribution of responses from men and women the question 8 of the questionnaire "Do you have a need for additional training or retraining?"

The ninth question was devoted to assessing the incomes of employees with different level of education. Processing the results showed that the assessment of income of professionals with different level of education and without vocational training in men is statistically different from the equal, that probably indicates consistency of opinions on this issue than actually on the assessment of income, although according to the frequency distribution table we can conclude that the assessment of due income should naturally increase from the employees without professional training to employees with higher education. This is, in general, does not contradict common sense notions of in-line association between qualification and income. On the whole in the sample for women, there is the same distribution pattern as in the sample for men, but in relation to an employee with higher education the number of categories (salary ranges) is less. Empirical distribution in assessing the due level of employee income without vocational training for men and women differs statistically, in general, women are more likely to assess the required level of income of a person without vocational education lower (up to 25 thousand rubles). With respect to assessment of due income of employees with basic vocational education, empirical distribution for men and women does not differ, and therefore, on the basis of the frequency distribution, the majority rate it as 20-35 thousand rubles. As to the assessment of a due level of income of the employees with secondary vocational education, empirical distribution for both men and women are not statistically different. From the frequency distribution, we can conclude that a significant proportion of women assess the level of necessary income from 20 to 35 thousand rubles, in a sample for men, this proportion is clearly smaller, that is they assess the necessary income for such employee higher (up to 50 thousand rubles). With respect to the due assessment of income of employees with higher vocational education empirical distribution of men and women are not statistically different, based on the frequency distribution we can say that the

majority believes that the level of income of such specialist must be more than 70 thousand rubles.

In the assessment of the association between the life and vocational education in the tenth question the distribution of responses in both men ($X^2 = 36,1$; $r \leq 0,001$), and women ($X^2 = 22,8$; $r \leq 0,001$) is statistically different from equal, however, if the majority of men still consider a line-in association as an increase in the level of education, the majority of women points out to the continuing need for vocational training with a view to self-development. In fact, the empirical distribution of notion about the association between life and need for vocational training in men and women is statistically different ($X^2 = 11,4$; $p \leq 0.05$) just due to the frequency of the second (in men) and fourth (in women) opinion on the histogram (Figure 5).

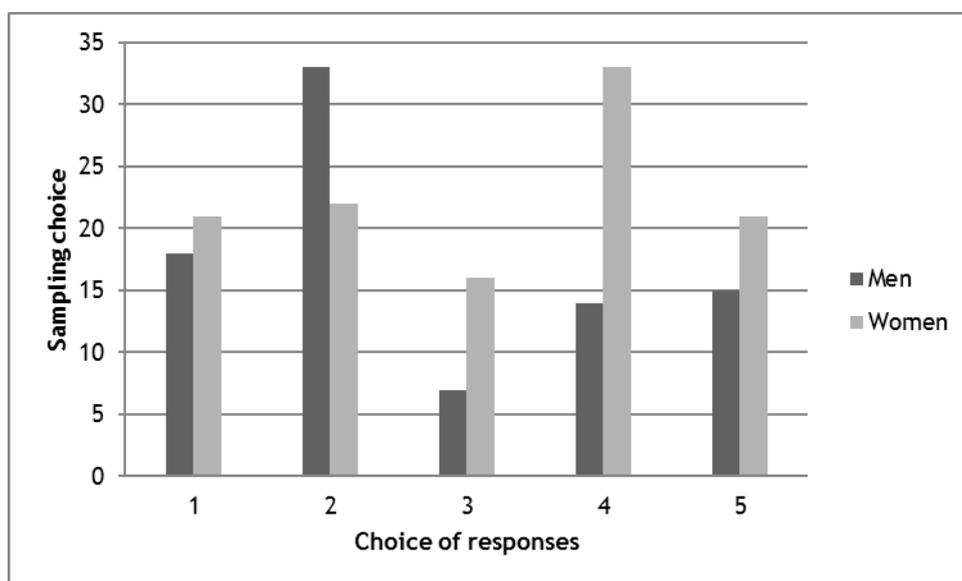


Figure 5. Histogram of frequency distribution of responses in men and women in question 10 of the questionnaire "How often or how exactly, in your opinion, should you receive professional training in the course of life?".

Note: 1 - just once in a lifetime is enough to receive vocational training; 2 - several times, increasing your own level of education from primary to higher; 3 - a few times when changing professions; 4 - constantly, for self-development; 5 - all the time, for increasing qualification.

In answer to the eleventh question of the questionnaire about the role of different levels of education for a real job placement, the empirical distribution of opinions in both men and women in regard to the role of primary vocational training in employment is not statistically different. Taking into account, unlike equal in both samples notion and the frequency distribution, it is possible to say that both men and women evaluate the role as low. Regarding the role of the level of secondary vocational education in the employment the empirical distribution in men and women does not differ statistically. Also taking into account statistical difference of empirical distribution from equal, it can be confirmed that the majority of men and women evaluate the role as significant.

Regarding the distribution of opinions about the role of higher vocational education in the employment, men and women do not differ in assessing this role as significant. Based on common sense, it would be difficult to expect otherwise.

The assessment of factors influencing the choice of profession has been set in the scale. Despite the small range of assessment the comparison criteria can be applied to the data. We started to check the difference of the empirical distributions from the theoretical normal using the one-sample Kolmogorov-Smirnov test (Table 9).

Table 9. Verification for normal assessment distribution of the factors significance influencing the career choices using the one-sample Kolmogorov-Smirnov test (n = 207)

Factors assessed	Kolmogorov-Smirnov Statistics Z	P - asymptotic significance (bilateral)
Q111 - parents	4,068	,001
Q112 - friends and acquaintances	6,291	,001
Q113 - own interests	5,462	,001
Q114 - prestige of the profession	2,821	,001
Q115 - demand in the labor market	3,260	,001

From the results demonstrating the difference from the normal distribution for all parameters, comparison was carried out using a statistical test Mann Whitney U. The results are shown in Table 10.

Table 10. Results of U-test comparison of independent samples in men (n = 90) and women (n = 117) on assessing the significance of factors influencing the career choices.

Factors assessed	Mann Whitney Statistics U	P - asymptotic significance (bilateral)	Average rank (men)	Average rank (women)
Q111 - parents	4497,000	,057	95,47	110,56
Q112 - friends and acquaintances	4407,500	,009	94,47	111,33
Q113 - own interests	5066,500	,587	101,79	105,70
Q114 - prestige of the profession	4763,000	,221	109,58	99,71
Q115 - demand in the labor market	4333,000	,023	114,36	96,03

As you can see the assessment of factors contribution in the choice of professional activity for men and women differ by only two factors: "friends and acquaintances" and "demand in the labor market." The role of the two factors, based on the values of the average ranks, men assess significantly higher.

The twelfth question "What do you think, how many graduates of secondary vocational education will be able to find job by occupation?" was assessed by men graduates with different levels of vocational education able to find job by occupation at all levels are different from equal distribution, that is, in fact, they are agreed and differentiated. Interest rate range increases together with the level of education, that is, the higher the level, the greater the number of graduates as a percentage according to the notion are able to find a job. The situation with women is the same. When comparing the empirical distribution in sample for men and women, we did not find statistical significance. Assessment of the primary vocational training graduates proportion able to find a job, do not

differ. If we take into account the highest rate it is 20 to 40%. In assessing the share of graduates of secondary vocational education, able to find a job by occupation the differences are not found, the highest rate in the evaluation of shares in both men and women is 40 to 60%. In assessing the employment of higher education graduates, statistical differences in frequency distribution of share assessment in men and women is also not detected. The highest share of the frequency is from 60 to 80%.

In general, analyzing the results of the employment assessment of graduates of different levels of vocational training by occupation, it should be noted that the assessments of both men and women are consistent (different from equal distribution, that is, we can say that the majority of both men and women selects a specific range) and, at the same time are consistent with each other, i.e. statistically, men and women in the frequency of the assessment of these ranges do not differ. However, the assessment itself may be in the nature of common sense, as for each successive stage of education the higher range is chosen.

Effects of self-determination on the time perspective of the person

The third phase of the study was carried out on the same sample - students of the extra-mural department of psychological and pedagogical and engineering training of the Russian State Professional and Pedagogical University in the: men (n = 90) and women (n = 117).

To investigate the effects of statistics in this case we chose ANOVA in which the factor levels acted as the degree of agreement with the statement in relation to their own professional and educational needs and attitudes (item 5 - 8 of the questionnaire), which is an ordinal scale. This is logically equivalent groups of subjects were combined into one level (for example, the answer is "yes" and "probably yes"), in order not to complicate the psychological content of the conclusions.

ANOVA results are presented in the following order. On some questions of the questionnaire results of the homogeneity test dispersions are given, allowing us to make conclusions on trusting the results of factor analysis. After that, the actual results of the factor analysis and graphics of average, illustrating the results are presented to detect the statistically significant influence effects of the level of the independent variable on the dependent (time perspective).

For the fifth question of the questionnaire "Are you planning to get an education of a higher level?" statistical effects were not found. That is the planning of education of a higher level is not correlated with the expression of a particular time perspective.

For the sixth question, "If you were to receive vocational training again, would you choose the educational institution, which you studied or study in now?" the effect was observed. As shown in Table 11, Levene's test does not reach statistical significance on any item, that is, the dispersions of time perspective scale in compared samples (groups with different choices) do not differ, and therefore the results of the factor analysis can be trusted.

Table 11. Verification of the dispersion homogeneity of time perspectives index for the effects of the sixth item questionnaire assessment.

Time perspective	Levene's test statistics	Degree of freedom df (1)	Degree of freedom df (2)	P - asymptotic significance (bilateral)
Negative past	1,039	2	204	,356
Hedonistic present	1,012	2	204	,365
Future	1,076	2	204	,343
Positive past	1,449	2	204	,237
Fatalistic present	,737	2	204	,480

The results of ANOVA for the sixth item of questionnaire are presented in Table 12.

Table 12. Results of ANOVA for the sixth item of the questionnaire

Time perspective	Dispersion	Sum of squares	Degree of freedom df	Average square	F	P - asymptotic significance (bilateral)
Negative past	Between the groups	,980	2	,490	,802	,450
	Inside the groups	124,671	204	,611		
	Total	125,651	206			
Hedonistic present	Between the groups	1,309	2	,654	2,018	,136
	Inside the groups	66,153	204	,324		
	Total	67,462	206			
Future	Between the groups	2,969	2	1,485	4,272	,015
	Inside the groups	70,893	204	,348		
	Total	73,862	206			
Positive past	Between the groups	,305	2	,152	,432	,650
	Inside the groups	71,890	204	,352		
	Total	72,195	206			
Fatalistic present	Between the groups	1,618	2	,809	1,787	,170
	Inside the groups	92,362	204	,453		
	Total	93,980	206			

As you can see, the levels of agreement to the question "If you were to receive vocational training again, would you choose the educational institution, which studied or study in now?" have a statistically significant effect on the rate of time perspective "Future" ($F = 2,018$, $p \leq 0.015$).

On the diagram (Figure 6), you can see that the average values on index "Future" decreases rather smoothly from the sample of participants ready to change educational institution in the case of re-selection, to the point of those who would not agree to do it. In terms of interpretation it can be assumed that among those who are ready to give up or to review their own decisions regarding the choice of an educational institution orientation for the future is higher. The association can be seen as a certain rigidity of choice, which is caused by the in-line perception of time perspective, i.e. the one who is more focused on the future, ready to review the past and give up unproductive, in his view, decisions.

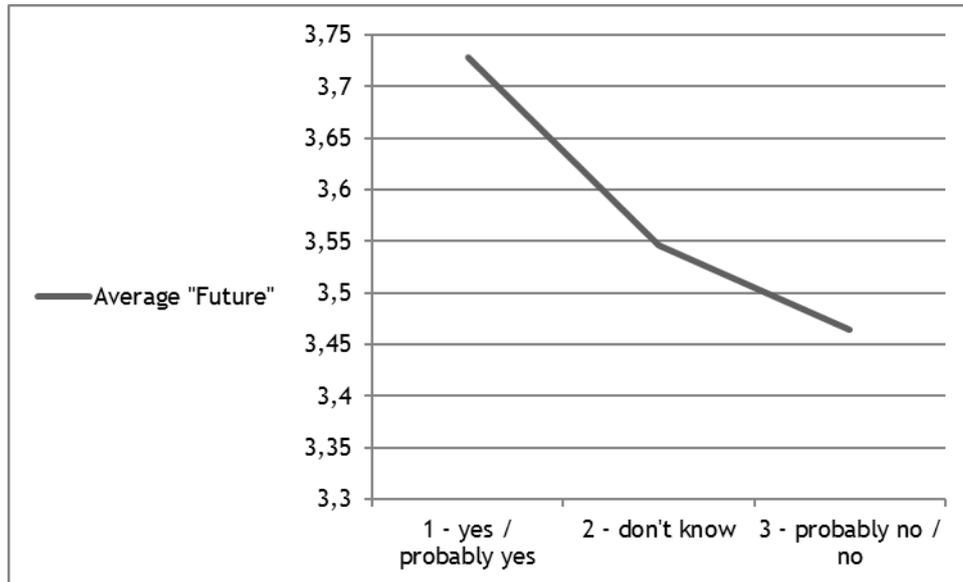


Figure 6. Diagram of average time perspective "Future" for the sixth item of the questionnaire "If you were to receive vocational training again, would you choose the educational institution, which you studied or study in now?"

For the seventh question "Do you feel the need to change your professional activity?", also the choice effects on the level of time perspectives performance were found. Verification of dispersion homogeneity is presented in Table 13 and the results in Table 14.

Table 13. Verification of the dispersion homogeneity of time perspectives indexes for assessment of the effects of the seventh item of the questionnaire

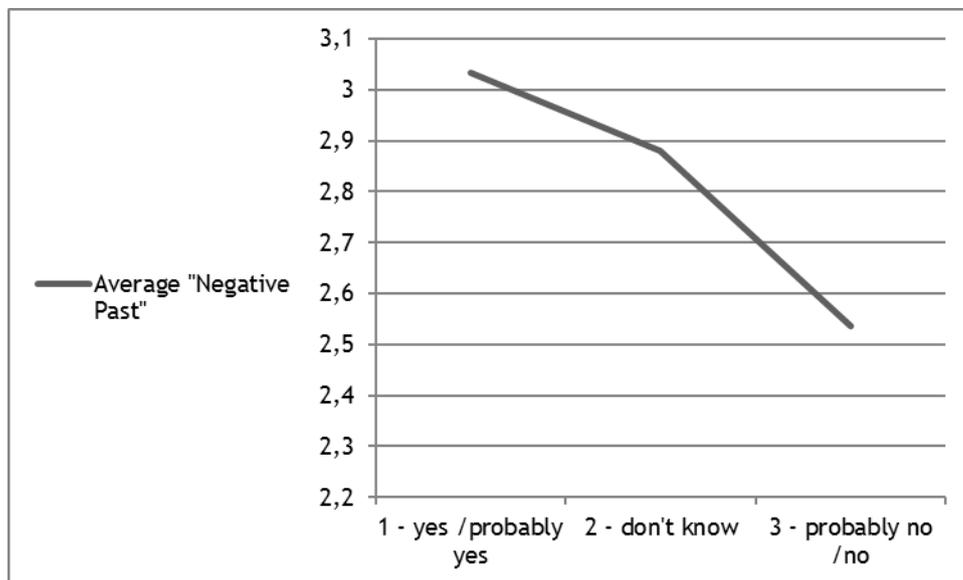
Time perspective	Levene's test statistics	Degree of freedom df (1)	Degree of freedom df (2)	P - asymptotic significance (bilateral)
Negative past	1,766	2	204	,174
Hedonistic present	1,408	2	204	,247
Future	,841	2	204	,433
Positive past	,655	2	204	,520
Fatalistic present	,668	2	204	,514

As can be seen from the table, Levene's test does not reach statistical significance on any of the items, i.e., the results of the factor analysis can be trusted.

Table 14. Results of ANOVA for the seventh item of the questionnaire

Time perspective	Dispersion	Sum of squares	Degree of freedom	Average square	F	P - asymptotic significance (bilateral)
Negative past	Between the groups	9,475	2	4,737	8,319	,000
	Inside the groups	116,176	204	,569		
	Total	125,651	206			
Hedonistic present	Between the groups	2,746	2	1,373	4,328	,014
	Inside the groups	64,716	204	,317		
	Total	67,462	206			
Future	Between the groups	1,088	2	,544	1,525	,220
	Inside the groups	72,774	204	,357		
	Total	73,862	206			
Positive past	Between the groups	,236	2	,118	,335	,716
	Inside the groups	71,959	204	,353		
	Total	72,195	206			
Fatalistic present	Between the groups	6,024	2	3,012	6,986	,001
	Inside the groups	87,956	204	,431		
	Total	93,980	206			

People with different sense of the need for a change of professional activity statistically differ in the level of expression of "Negative past" ($F = 8,319$; $p \leq 0,001$), "Hedonistic present" ($F = 4,328$; $p \leq 0,05$) and "Fatalistic present" ($F = 6,986$; $p \leq 0,001$), which is presented respectively in Figure 7, 8, 9

**Figure 7.** Diagram of average time perspective "Negative past" for the seventh item of the questionnaire "Do you have a need for a change of professional activity?"

In this case, the interpretation seems obvious: people who are ready to change the type of professional activity perceive past professional experience rather negatively.

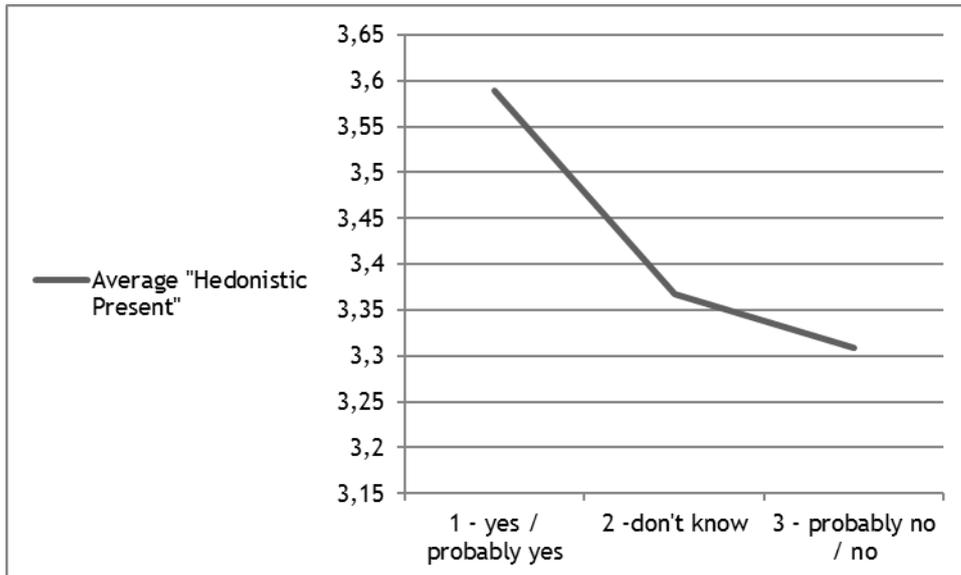


Figure 8. Diagram of average time perspective "Hedonistic present" for the seventh item of the questionnaire "Do you have a need for a change of professional activity?"

This interpretation, based on the values of the hedonistic present, is also quite obvious. Focusing on short-term pleasure, satisfaction with standard of living in the present, leads to the development of readiness for a professional activity. And finally fatalistic present, as a mindset of an inability to influence the present is clearly higher among those who feel the need to change the profession. The content analysis is not so obvious here, because logically people with a strong sense of fatalistic present should be indifferent to any changes. However, if we assume that the change of professional activity is less painful for self-esteem and self-awareness than interpersonal relationships, as well as more controlled from the point of view of a person, than the socio-economic environment as a whole, feeling the need for a change of professional activity can be linked with virtually the only way to overcome fatality. At the same time, we should note that it is only a feeling, perception of the situation, but not a real desire for such a change.

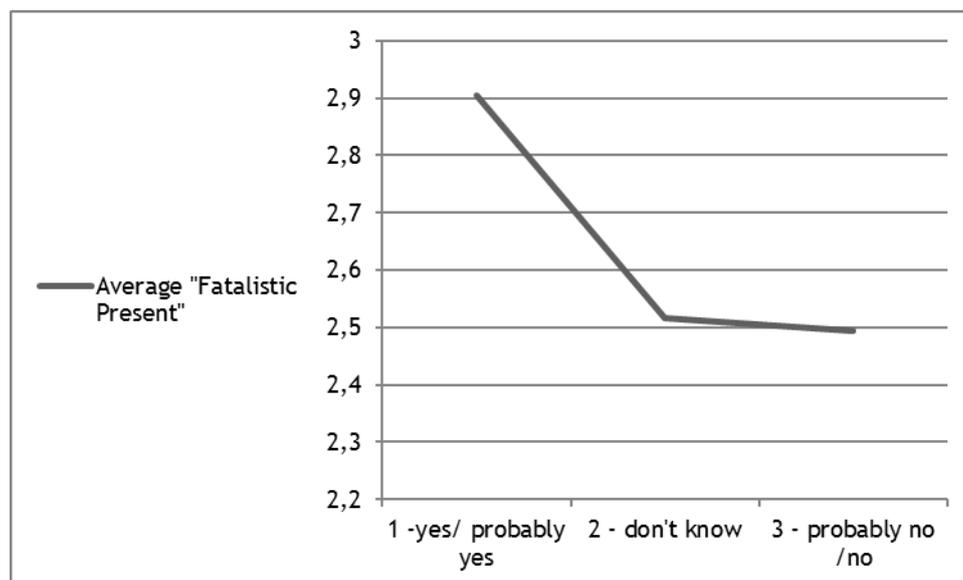


Figure 9. Diagram of average time perspective "Fatalistic present" for the seventh item of the questionnaire "Do you have a need for a change of professional activity?"

For question 8 of the questionnaire "Do you have a need for additional vocational training or retraining?", the effects of the choice on level of development of time perspective were also detected. Verifying of the dispersion homogeneity is presented in Table 15 and the results in Table 16.

Table 15. Verification of the dispersion homogeneity of the time perspectives index for assessing the effects of item 8 of the questionnaire

Time perspective	Levene's test statistics	Degree of freedom df (1)	Degree of freedom df (2)	P - asymptotic significance (bilateral)
Negative past	5,382	2	204	,005
Hedonistic present	1,201	2	204	,303
Future	,489	2	204	,614
Positive past	,913	2	204	,403
Fatalistic present	4,288	2	204	,015

As can be seen from the table Levene's test does not reach statistical significance, i.e., dispersion of compared samples does not differ, only in terms of "Hedonistic present", "Future" and "Positive past" indexes, hence the results of the factor analysis can be trusted only in terms of these variables.

Table 16. Results of ANOVA for the eighth item of the questionnaire

Time perspective	Dispersion	Sum of squares	Degree of freedom df	Average square	F	P - asymptotic significance (bilateral)
Negative past	Between the groups	1,105	2	,553	,905	,406
	Inside the groups	124,546	204	,611		
	Total	125,651	206			
Hedonistic present	Between the groups	,138	2	,069	,208	,812

	Inside the groups	67,325	204	,330		
	Total	67,462	206			
Future	Between the groups	2,155	2	1,078	3,065	,049
	Inside the groups	71,707	204	,352		
	Total	73,862	206			
Positive past	Between the groups	2,242	2	1,121	3,269	,040
	Inside the groups	69,953	204	,343		
	Total	72,195	206			
Fatalistic present	Between the groups	1,326	2	,663	1,460	,235
	Inside the groups	92,654	204	,454		
	Total	93,980	206			

As you can see, the results of the factor analysis were statistically significant only for "Future" ($F = 3,065$; $p \leq 0,05$) and "Positive past" ($F = 3,269$; $p \leq 0,05$), which are illustrated in diagrams 10 and 11 respectively.

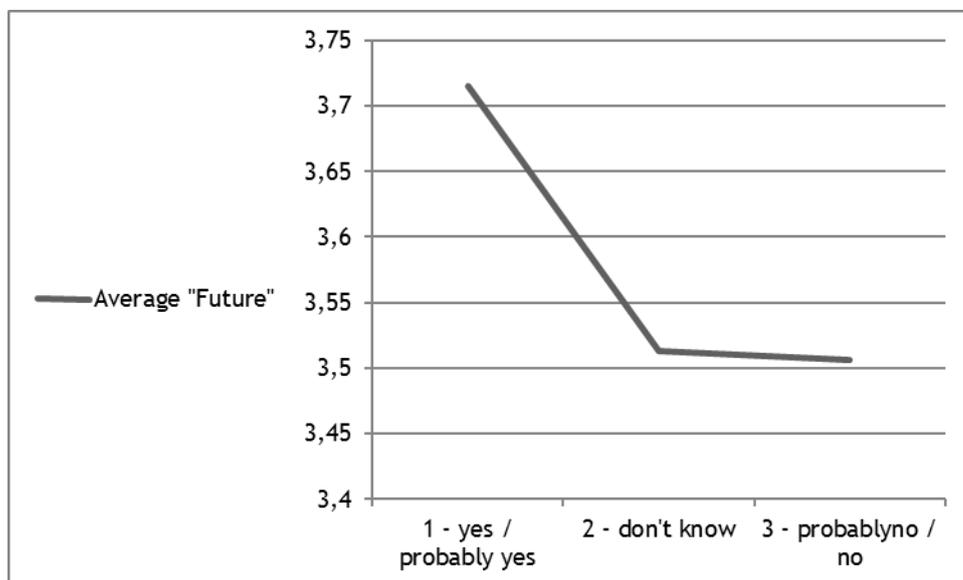


Figure 10. Diagram of average time perspective "Future" for the eighth item of the questionnaire "Do you have a need for additional vocational training or retraining?"

The diagram is self-evident, in the sample of participants who feel the need for additional vocational training or self study, the level of temporal perspective performance "Future" is higher.

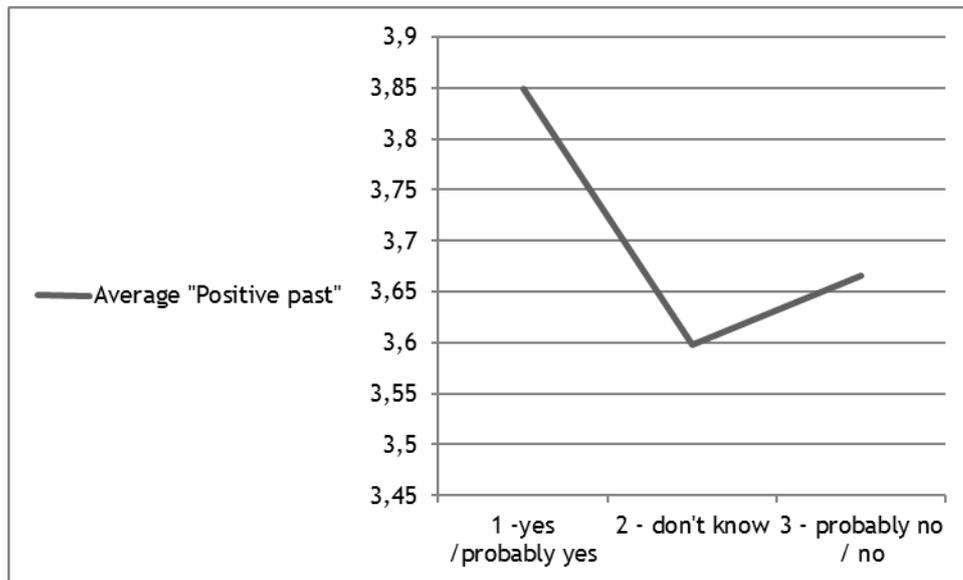


Figure 11. Diagram of average time perspective "Positive past" for the eighth item of the questionnaire "Do you have a need for additional vocational training or retraining?"

In the case of differences in the scale "Positive past" of people with different mindset on the need for additional vocational training or retraining, psychological interpretation is not obvious. It can be assumed that the positive perception of their own past is not only a condition but also psychological support for confidence in the favorable results of training or retraining.

Thus, in the course of one-way ANOVA the effects of the influence of the degree of agreement with the opinions in respect of professional self-determination (intentions, needs or retrospective assessment) at the level of existence of different time perspectives were revealed.

Discussions

In general, considering the time perspective, time competence of the person and their correlation with subjective perceptions in the context of lifelong education, attention should be paid to some moments of ontogeny. To begin with, it should be noted that the basic laws of formation of the concept of time in early childhood are considered in psychology. (Subbotsky, 2007). Obviously, causal connection both in objective and in social space are mastered in practical life situations in different forms of thinking. In the specific activities interaction of thinking and perception creates the vision of the world. It should be noted that mastering the professional activity in the ontogeny of a man plays an important role for the development both in psyche and personality. Inclusion in the professional sphere begins, of course, in early childhood, but fully becomes actual in the form of the relevant age problem of choosing a carrier and vocational educational institution. In domestic theories of professional development and professionalization sustainable designation of the subject and the stage – optant and optation has been consolidated. (Klimov, 2010). Further mastering and implementation of professional activity structures consciousness

through professional knowledge, skills, ways of performing activities. While mastering and implementation of activities professional consciousness and identity is developed. Subjective perception is an integral part of the vision of the world, which is formed in the process of acquiring experience. Hence, it is natural to assume that the profession affects the vision of the world (Klimov, 1995). The studies confirmed the presence of the professional specificity and semantic and perceptual layers of vision of the world (Serkin, 2012). Thus, it is possible to say that there is not only a direct impact on the properties, qualities and abilities, but also on the formation of the vision of the world as a whole.

Introduction and verification of the concept of "time perspective", its empirical studies have shown that the dominant direction of time linked to personality traits and actual behavior of the personality (Zimbardo & Boyd, 2010). It is clear that time direction and prospect forms not only the immediate social environment, the broad social environment, but also the activity of the personality, his success in various activities, subjective experiences of life situations and integrated assessment of life satisfaction. Professional sphere is included in the perspective as an element of social life and activity, subjectively meaningful, as well at the stage of choosing a profession (Golovakha, 1988). Personality analysis by biographical research methods shows that professional sphere events are presented in the allocated event at least in the normative form (Kronik et al., 2008). Empirical studies, which consider specific correlation of time perspective with the components and content of professional development at different stages, are represented in individual studies. So, it is established that the temporary prospective "Negative past" and "Fatalistic present" correlate with all the crisis experiences of students at the initial stage of training at the university, and the time perspective "Future" has an inverse correlation with the crisis experience "no noticeably attractive future goals", there is no association with crises (Kurus, 2016).

Acceleration of the pace of social life, culture and the things world renewal, the development dynamic of the profession in the twentieth century marked the problem of obsolescence of professional knowledge in the course of life of a generation. The processes of self-determination and social mobility also contribute to the ability to change the professional development vector even to the professional development in another area. The idea of life-long education is designed to overcome the contradiction between the possibilities of forms and methods of professional training in national system of vocational education and the need of the individual in mastering the profession as a social welfare source, positive identity and self-determination and self-current zone. Given the variability of levels, methods, forms, content and education organization an idea of individual educational path, need for generalization of the conceptual foundations of its forecasting and constructing is arisen (Lomakin, 2013).

Thus, the analysis shows that in some aspects of the problem, there are both theoretical principles and empirical studies to consider individualization of educational path on the basis of time perspective of the person and its subjective perceptions. The study of psychological and educational literature allows ascertaining the absence of specific studies on the problem of formation of

individual educational paths based on subjective perceptions. However, the theoretical and methodological base of self-actualization as a base for acmeological development, leading to the highest achievements of man, including in the professional activity are summarized (Derkach & Saiko, 2010). The methodology of vocational teacher education, including the substantiation the need and formation of technological base to promote professional self-determination in the course of life and the stage of vocational training is proved (Dorozhkin & Zeer, 2014). The theoretical and methodological background for the study of time prospective characteristics of self-actualization of the subject in vocational educational space is summarized (Zavodchikov, 2013). Additionally, you can consider the features of a professional future and its prediction (Zeer & Symanyuk, 2014).

Currently, considerable experience is accumulated and the conceptual basis for the formation of the educational path in continuing education is developed (Lomakin, 2013). However, as E.F. Zeer & E.E. Symanyuk (2013) pointed out, educational paths should be designed by psychologists, that is, the individual logic of human development and subjectively meaningful for the individual. Subjective experience of person's life his prediction of the future based on the past and the present reflection, designing a desired future makes up the content of psychologics (Zeer & Symanyuk, 2014).

In our research we laid a foundation for the initial stage of study and substantiation of subjective concepts and time perspective as an empirical basis of individualization of educational paths. In fact, we examined gender differences in relation to the basic concepts of the training system, retrospective and projective opinions about their own professional development and revealed their correlation with time perspectives. Further work requires the organization of large-scale panel or longitudinal study with psychosomatic techniques, biographical methods and measuring the level of subjective life satisfaction. The organization of such studies also requires different professional samples.

Conclusion

It was established that currently there is a need of society and the individual in the individualization of vocational and educational process, there is methodological and theoretical background to generalizing on the conceptual level the practice of formation of individual educational paths in the system of continuing education on the basis of the institutionalization of different types and forms of education. It is stated that the theoretical, methodological and practical base of psychology and pedagogy has grew into the stage to explain professional and educational needs of the people, to interpret them in the context of the life experience and to solve specific development problems associated with the formation of individual life and professional career of the person on the assumption of the general principles of development. It was found that the systematic study of concepts about the educational system, retrospective-prospective (forward-looking) aspects of their own professional development and their correlation with a time perspective, can serve as a real empirical basis of individualization of vocational and educational process and

the formation of individual educational paths. In the course of empirical research it was established that there are significant differences in perception and intention (subjective concepts) with regard to occupational choice in the events of the past and the future, as well as certain aspects of the system of vocational education in men and women students. On the basis of analysis of variance we demonstrated the correlation of time perspectives performance level and retrospective and predictive opinions about their own professional development.

The contents of this article may be useful to researchers, teachers and educational support staff involved in the theory and practice of individualization of vocational and educational process, the formation of individual educational paths in the education system.

In the course of the study new questions and problems which need decision have arisen. On a theoretical level, it is necessary to consider in depth the correlation of time perspective and professional development of the individual. At the empirical level it is necessary to develop a series of studies on different professional and age groups, with the expansion of methodical equipment.

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Disclosure statement

No potential conflict of interest was reported by the authors

Notes on contributors

Dmitry P. Zavodchikov is Candidate of Pedagogic Sciences, Associate Professor, Associate Professor at the Department of Psychology of Education and Professional Development in the Russian State Vocational Pedagogical University, Ekaterinburg, Russia.

Anton A. Sharov is a Postgraduate, Senior Lecturer at the Department of Psychology of Education and Professional Development in the Russian State Vocational Pedagogical University, Ekaterinburg, Russia.

Olga F. Chistik is Professor of Samara State University of Economics, Samara, Russia.

Ivan V. Larionov is Associate professor of Samara State Technical University, Samara, Russia.

Olga A. Naumova is Associate professor of Samara State University of Economics, Samara, Russia.

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