

Maturity of Teenagers' Occupational Preferences as a Factor in Their Socialization*



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Abstract. One of the most acute problems in employment of both the country in general and the region in particular is the structural imbalance caused by the mismatch of professional skills of graduates of educational institutions with labor market requirements. The reason for this process is often an inefficiently structured vocational guidance and lack of close interaction between potential employers and the educational system. The authors analyze the degree of maturity of teenagers' occupational preferences and its impact on timely acceptance of social roles and their skillful performance in accordance with the requirements of the modern innovation-oriented society. The informational base of the study includes data of the 2015 comprehensive survey

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of children in their mid and late teens enrolled in the Research-Educational Center of ISED T RAS (8–11 grades). The obtained results suggest that the key issue in terms of occupational self-determination corresponding to teenagers' personal inclinations is their unawareness about the conditions and basic requirements for the profession; about their own physiological capabilities; the inability to compare their preferences with the real abilities. Thus, the majority of teenagers plan to enter a higher educational institution after graduating from secondary school (82%), they either do not consider secondary or initial vocational education at all, or see it as an intermediate educational stage. In 48% of cases, teenagers choose specialty which does not comply with the type of their occupational preference. Thus, it can be concluded that the system of vocational guidance is currently unable to reach its ultimate goals, namely the formation of adolescents' intelligent occupational self-determination corresponding to the individual peculiarities of a personality and, at the same time, the society's demand for staff, and its requirements of a modern employee. To address these issues, the authors propose the changes in two key areas: modernization of the system of school vocational guidance and formation of a unified information space for establishing balance between the demand of young people for certain occupations and their supply in the labor market.

Key words: occupational preferences, self-determination, professional guidance, socialization, adolescents.

The mismatch between education and the labor market, namely, between the model for personnel training and the realities of the market economy, is one of the key problems in Russia and in foreign countries. In most cases it consists in the significant discrepancy between the actual and requires levels of education [19, p. 101]. Consequently, special importance is now attached to the issue of structural unemployment, i.e. the mismatch between professional qualities of the workers, especially young professionals, and the requirements of modern labor market. This fact is confirmed by the research findings of several Russian scientists (R.I. Kapelyushnikov, V.E. Gimpelson, A.L. Luk'yanova, T.V. Popova, G.V. Leoni-

dova, K.A. Ustinova, etc.) [3; 6; 9; 14; 18; 19; 22]. Questions concerning the imbalance between actual and desired levels of education of educational institutions graduates are considered in the works of many foreign authors (J. Heckman, B. Jacobs, J. Robst, P.J. Sloane, K. Mavromaras, S. McGuinness, N. O'leary, Z. Wei) [27; 28; 30; 32].

Since the employment of graduates in their specialty is an essential factor in the realization of their labor potential, promotion of their innovation activity and thus, their successful socialization, it must be underlined that searching for ways to solve this problem is of strategic importance for sustainable development of territories.

According to the results of monitoring studies conducted by ISEDT RAS¹, 49% of working age population in the Vologda Oblast work within their specialty, while 40% work outside it. It should be noted that a high proportion of able-bodied population working outside their specialty is not a momentary deviation, this phenomenon can be called a trend because it is observed in the region over the past decade. This problem is not so acute in economically developed countries. For comparison, according to a research conducted in Sweden [29], 61% of men and 71% of women work within their specialty, and 16 and 10%, respectively, – in adjacent fields. As for the U.S., only 1/4 of its population work outside their specialty [31].

The cause of this structural imbalance often lies in the mismatch between the labor market and the education system and in the ineffective system for occupational guidance of schoolchildren, students of secondary vocational and higher educational institutions.

In considering the question of vocational guidance, it is useful to refer to the positive experience of foreign countries. For instance, in the United

States, this work is prolonged and progressively more complex: first, students are introduced to the world of professional work, their core aptitudes and abilities are identified in dynamics, on this basis long-term forecasts for their choice of profile of further education are created; then, students are offered to try their abilities in a particular field of professional activity. A notable advantage of the American system of career guidance is the presence of strong external relations between educational institutions, professional educational institutions and enterprises on the principle of social partnership (for example through “mentoring”) [11, p. 31]. In addition, a significant aid to students in the USA in finding and choosing future profession is provided by the psychological and advisory system “Guidance”, parents’ associations and the National Council on Coordination and Professional Self-Determination of Youth [26].

In France, the practice of vocational guidance consists in a close interaction of extracurricular (work of special services of various levels) and in-school components; in addition, it is coordinated by three Ministries: Labor, Health and Education. In the framework of in-school career guidance, secondary education in France is divided into five pedagogical cycles: 1) monitoring and adaptation – the study of the student’s personality,

¹ Monitoring of the quality of labor potential in the Vologda Oblast. The able-bodied population over the age of 16 living in the Vologda Oblast is the object of the study. The surveys are carried out annually in August – September in the cities of Vologda and Cherepovets and in eight districts of the Vologda Oblast (Babaevsky, Velikoustyugsky, Vozhegodsky, Gryazovetsky, Kirillovsky, Nikolsky, Tarnogsky and Sheksninsky). The sample size is 1,500 people.

definition of their abilities, aptitudes, knowledge, psychophysical data, and individual traits of character (6 grade²); 2) central cycle – introducing students to the diversity of the world of professions, the choice of optional subjects according to their interests and capabilities (5–4 grades); 3) orientation – definition of further educational path: general and technological college; vocational school; vocational training center (3 grade); 4) definition – clarification of professional preferences of students, organization of internships at enterprises, meetings with former schoolchildren who have become college students and with specialists in various professional fields (2 grade); 5) graduation cycle – information about different educational institutions of professional education, their admission rules, education environment, prospects for further employment (1st grade). The first three cycles relate to the training in college, the last two – in high school. It is noteworthy that since the 4th grade, students, if they wish, can do an internship at an enterprise in the form of a “study visit” or a “watch session” [23, p. 106-108].

Professional self-determination is not equivalent to the act of choosing a profession. It should be viewed as a complex and lengthy process, as a result

² The various school years in France are numbered on a decreasing scale

of which the linkage is formed between personal characteristics and professional requirements [24]. Professional self-determination is formed gradually throughout a person's life, however, according to leading experts in the field of developmental psychology (L.I. Bozhovich, E.A. Klimov, I.S. Kon, D.I. Fel'dshtein, D.B. El'konin, etc.) [2; 7; 8; 20], adolescence is the most significant period in this case. Here, the desired future and the actual present inevitably clash, which is exacerbated by age crisis and the crisis of educational and vocational guidance [5, p. 103]. In addition, there remains the problem of matching this choice to the needs of the labor market and the abilities necessary for achieving success in specific labor activity.

The purpose of the present paper is to analyze the degree of formation of professional self-determination in adolescent schoolchildren and to identify its impact on their timely mastery of social roles and their skillful execution in accordance with the requirements of modern innovation-oriented society. The information base of the study includes the findings of the 2015 complex examination of middle and late adolescents who study at the Research-and-Education Center (REC) at ISEDT RAS (8–11 grades)³.

³ Seventy five students from various schools of Vologda who study at REC ISEDT RAS participated in the survey. Among them: 52 – middle adolescents (13–16 years of age), 23 – late adolescents (17–18 years of age).

It should be emphasized that one of the key areas of REC is initial professional training of schoolchildren and subsequent specialization of their education and orientation to work in highly intellectual industries; this is why the most talented and motivated children study there [10, p. 96]. At the same time, children who study at the Research-and-Education Center go to ordinary city schools and unite in city-wide classes to study the courses offered at REC. It was not our task to obtain quantitative estimates; it was important to assess for this particular sample the formation of vocational self-determination in junior and senior high school students and, indirectly, the effectiveness of career guidance.

The research is based on the following methodological foundations:

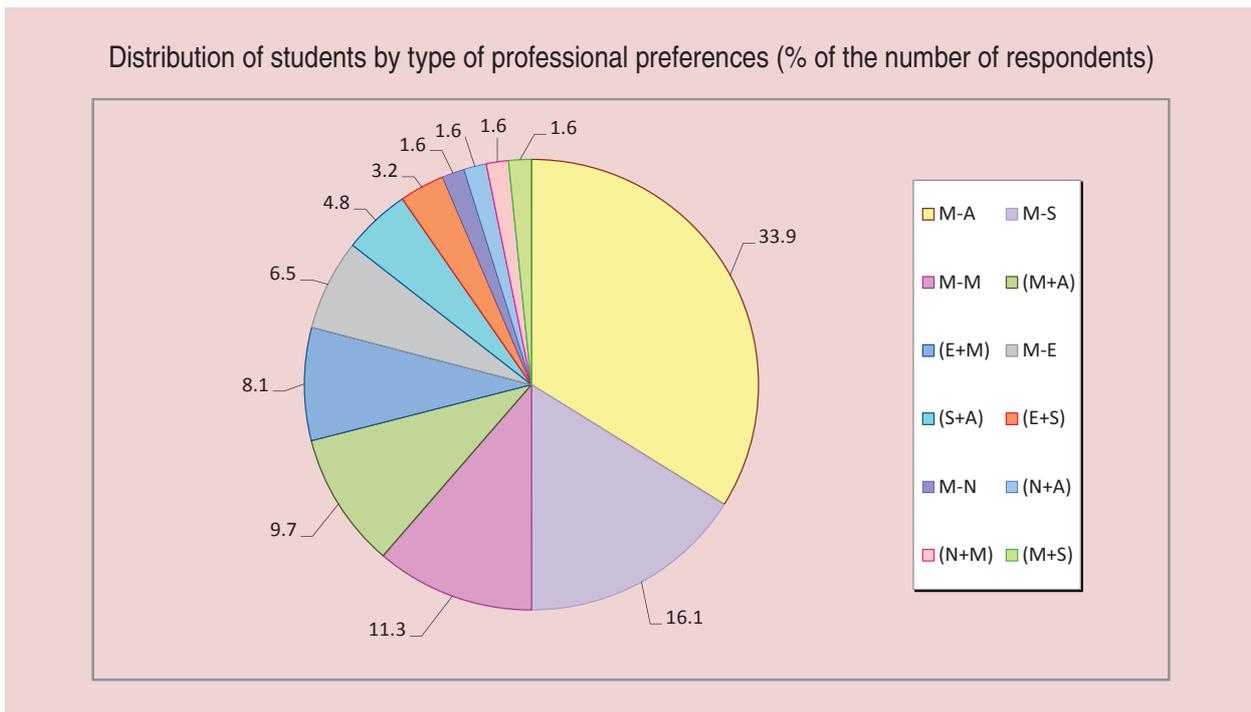
- differential-diagnostic questionnaire by E.A. Klimov, required for assessing professional orientation on the basis of preferences to different types of activities (helps identify a certain type of professions that a student belongs to);

- additional questionnaire surveys – in order to get information about specific occupational preferences of adolescents on what they are planning to do after graduating from school, about school subjects and personal qualities necessary to master their chosen profession, about the extent of adolescents' knowledge about educational institutions that train students in their chosen profession, etc.;

- focus group study – to determine the views of adolescents about success and about the qualities necessary for its achievement, about their future profession, about possible obstacles in mastering the profession, etc.

A crucial aspect in the assessment of formation of professional self-determination is the match of chosen profession, personal qualities, aptitudes and predisposition of children. The results of the diagnostics of belonging to a particular type of profession⁴ according to E.A. Klimov's methodology show that more than one third of the students surveyed (34%) are oriented toward the "man –artistic image" profession type (*Figure*). The second place among the schoolchildren's professional orientations belongs to "M-S" (16%), the third – to "M-M" (11%). Ten percent of the students belong to a mixed type "M+A", 8% – "E+M". It is noteworthy that only 6.5% of the adolescents showed predisposition to professions such as "M-E" and 2% – to the "M-N" type. Other combinations of the types of professional preferences were observed in the remaining 13% of the students.

⁴ Types of professional preferences according to E.A. Klimov: man-nature (M-N); man-equipment (M-E); man-man (M-M); man-sign system (M-S); man-artistic image (M-A); man-nature + man-man (N+M); man-nature + man-artistic image (N+A); man-equipment + man-man (E+M); man-equipment + man-sign system (E+S); man-man + man-sign system (M+S); man-man + man-artistic image (M+A); man-sign system + man-artistic image (S+A).



Analyzing the responses to the open question “What kind of profession are you planning to choose?”, we have revealed a symptomatic outcome: in 48% of the cases, teenagers who study at REC chose specializations that do not correspond to their individual type of professional preferences. What can be the possible explanation to this fact? V.G. Yakimov believes that the choice of a path of educational and professional development by high school students is often impulsive, they are poorly prepared for integration into vocational education and are not mobile enough [25, p. 4].

It is worth noting that in most cases the chosen specialty coincided with the vocational orientation in children with mixed types of vocational preferences: “N+M”, “N+A”, “E+S”, “E+M”,

“M+A” and in children with the “M-S” type (*Tab. 1*), while adolescents belonging to other types, in most cases, chose a specialty, not corresponding to their individual inclinations. For example, schoolchildren with the “man-artistic image” type of professional preferences mostly chose professions in the field of management and personnel management (HR-Manager, PR-Manager, etc.), and every second adolescent belonging to the “man-man” type pointed out as a priority the specialty more suited to the “man-sign system” type (financial economist, stock exchange specialist, radiologist).

One of the key components of the “maturity” of decision in choosing an educational or professional path is the maturity of adolescents’ views on further actions after graduation, especially for

Table 1. Compliance of professions chosen by adolescents with their types of professional preferences

Compliance of the chosen profession with the type of professional preferences	Types of professional preferences (according to E.A. Klimov)												Total
	N	E	M	S	A	N+M	N+A	E+M	E+S	M+S	M+A	S+A	
Total (pointed out a profession and completed the test)*	1	4	6	6	16	1	1	4	2	1	6	2	50
Number of matches, abs.	0	2	3	4	4	1	1	3	2	1	4	1	26
Share of matches, %	0.0	50.0	50.0	66.7	25.0	100.0	100.0	75.0	100.0	100.0	66.7	50.0	52.0
Number of mismatches, abs.	1	2	3	2	12	0	0	1	0	0	2	1	24
Share of mismatches, %	100.0	50.0	50.0	33.3	75.0	0.0	0.0	25.0	0.0	0.0	33.3	50.0	48.0

* Some of the children did not answer the question "What profession are you planning to choose?"

graduates of comprehensive schools. A survey of the students of 8–11 grades has shown that, in general, higher education is a dominant preference among them (82%).

And it is curious that none of the children interviewed did not point out possible variants like "to obtain a specialized secondary education (at a technical school) or "to find a job directly after graduating from school", it indicates that working occupations are not popular among adolescents. This conclusion can be confirmed by the views of O.S. Moiseeva who notes that in our days, in spite of the demand for working professions on the labor market, young people usually do not even consider them as promising [17, p. 61].

Data on the specifics of the choice of educational path by schoolchildren show major structural changes in the education system: the vast majority of schoolchildren in the 8th–9th grades who plan

to continue their education in the 10th–11th grades of comprehensive school are focused on the further training in high school and they either do not consider the middle and elementary levels training at all, or consider them as an intermediate stage. Labor shortage and the decline in economic activity among working age citizens, especially among young people up to 24 years old, is largely due to the increase in the extent of involvement of this category in the process of obtaining education, mainly, higher education [13; 21, p. 21].

Most of the interviewed students (45%) have not make a final decision concerning the choice of future profession, and the share of such answers is higher among children 13–16 years of age compared with children 17–18 years of age (49% vs. 39%). In addition, among middle adolescents there were significantly more of those who do not know what profession they want to

choose (23% vs 9%). This is largely due to the diffuseness and uncertainty of professional intentions of adolescents aged 13–16; therefore, they often cannot realize professionally oriented dreams and romantic aspirations [16, p. 211]. At the same time, more than half of late adolescents (52%) have finally decided on the choice of profession and only 9% do not know what specialty they want to choose.

The motives for choosing a profession are determined by social conditions, ideas about the specifics of professional activity, information about it, health condition [4, p. 165]. But the choice of a profession can be influenced by situational, often accidental, causes like fascination with the outer side of the profession and the wrong idea about the content of the future work [1].

According to the results of a survey conducted among schoolchildren, in choosing a profession they are mostly guided by the interest in the profession (89%). The opportunity for career growth ranks second in its importance (60%), and the prestige of the profession ranks third (40%; *Tab. 2*). However, only 8% of adolescents are guided by the desire of their parents as an external motive for choosing a profession; this fact may indicate sufficient independence of their decisions.

It is noteworthy that the students of graduation classes compared to the rest in general tend to choose a profession taking into account the demand for it in the labor market, its prestige, the possibility of continuous training and professional and career growth. This fact indicates that this group is better informed about the

Table 2. Distribution of answers to the question: "What influenced the choice of this profession?" depending on the age group of schoolchildren (in % of the number of respondents)

Answer options	Age		Average
	Middle adolescence (13–16 years)	Late adolescence (17–18 years)	
Interest	87.2	91.3	88.7
Professional growth, successful career	53.8	69.6	59.7
Prestige of the profession	30.8	56.5	40.3
High wages	33.3	43.5	37.1
Demand for the profession on the labor market	23.1	52.2	33.9
Opportunity to upgrade one's skills continuously	25.6	43.5	32.3
Good working conditions	20.5	34.8	25.8
Parents' desire	7.7	8.7	8.1
Other	10.3	8.7	9.7

The question suggested the possibility of selecting multiple answers, so neither of the columns adds up to a total of 100.

real situation, trends in the labor market and the current demand for professions.

Another important criterion of professional identity is the awareness of adolescents about the educational institutions that train specialists in the chosen specialty. Their answers to the question whether they know of such educational institutions in the region, country or abroad, have shown that the majority (60%) are not informed about this. Low awareness among schoolchildren 13–16 years of age compared to 17–18-year-old adolescents (41% vs. 91%) about the educational institutions that train specialists in their chosen profession is a serious problem, because at the end of the 9th grade of the secondary school some of them decide on

entering secondary vocational education institutions. Without such knowledge, the ninth-graders are in danger of making a situational and ill-considered choice of the educational path that in the long term increases the probability of their leaving the educational institution and entering another one, or working after graduation in the field not related to their specialty.

The degree of formation of professional self-determination of students can be judged by the choice of core school subjects required for mastering the chosen specialty. Thus, physics, mathematics and the humanities are most popular among adolescents (52 and 50%, respectively; *Tab. 3*). Further, according to the degree of priority, we can name philological subjects (32%), information technology

Table 3. Distribution of answers to the question: “Do you know what school subjects are more important to you in order to master the chosen profession?” depending on age group of students (in % of the number of respondents)*

Answer options	Age		Average
	Middle adolescence (13–16 years)	Late adolescence (17–18 years)	
Physics and mathematics (algebra, geometry, physics)	53.8	47.8	51.6
Information technology (data processing, programming)	38.5	8.7	27.4
Natural sciences (chemistry, biology, geography)	23.1	17.4	21.0
Humanities (history, law, social science)	43.6	60.9	50.0
Philology (Russian language, literature, foreign language)	28.2	39.1	32.3
Economics	28.2	26.1	27.4
Physical education	12.8	21.7	16.1
Manual training (labor, technical drawing, technology)	5.1	4.3	4.8
Art (music, visual art, world art culture, etc.)	5.1	21.7	11.3

* The question suggested the possibility of selecting multiple answers, so neither of the columns adds up to a total of 100.

and economics (27%, respectively). Adolescents give the least preference to the subjects related to labor studies (5%) and art (11%).

It should be emphasized that it is late adolescents that develop a selective attitude toward academic subjects. However, if selectivity in junior high school students depends, as a rule, on the personality of the teacher and on the level and style of teaching, then the motives of senior high school students in choosing a subject are of a completely different nature: they are guided by their own current interests and professional orientation.

Having analyzed the conformity of the subjects that adolescents chose as the most important for mastering their selected specialty to the types of their professional preferences, we observe a high degree of correlation between these characteristics. So, the children belonging to the “man-nature” type chose mainly the natural sciences, those of the “man-equipment” type – mainly physical-mathematical subjects and information technology, “man-man” type – the humanities and economics, “man-sign system” type – information technology (Tab. 4). Teenagers with the professional orientation of the “man-artistic image”

Table 4. Distribution of answers to the question: “Do you know what school subjects do you need most in order to master the chosen profession?” depending on the types of professional preferences of schoolchildren (according to E.A. Klimov)*

Answer options	Professional preferences											
	N	E	M	S	A	N+M	N+A	E+M	E+S	M+S	M+A	S+A
Physics and mathematics (algebra, geometry, physics)	0.0	100.0	42.9	50.0	38.1	0.0	100.0	80.0	100.0	0.0	50.0	66.7
Information technology (data processing, programming)	0.0	50.0	14.3	70.0	4.8	0.0	0.0	40.0	50.0	0.0	16.7	66.7
Natural sciences (chemistry, biology, geography)	100.0	0.0	28.6	20.0	23.8	0.0	0.0	20.0	50.0	0.0	0.0	33.3
Humanities (history, law, social science)	0.0	0.0	71.4	30.0	57.1	100.0	0.0	60.0	0.0	100.0	66.7	66.7
Philology (Russian language, literature, foreign language)	0.0	0.0	28.6	30.0	33.3	100.0	0.0	40.0	50.0	0.0	33.3	66.7
Economics	0.0	0.0	57.1	30.0	19.0	0.0	0.0	60.0	0.0	0.0	16.7	66.7
Physical education	0.0	0.0	28.6	20.0	19.0	0.0	0.0	20.0	0.0	100.0	0.0	0.0
Manual training (labor, technical drawing, technology)	0.0	0.0	0.0	10.0	4.8	0.0	0.0	0.0	50.0	0.0	0.0	0.0
Art (music, visual art, world art culture, etc.)	0.0	0.0	0.0	10.0	14.3	100.0	100.0	0.0	0.0	0.0	16.7	0.0

* The question suggested the possibility of selecting multiple answers, so neither of the columns adds up to a total of 100. Note. Green represents the selected school subjects corresponding to the type of professional preferences, red – those that do not correspond to the type of professional preferences, grey – unselected options.

type gave more preference to the humanities, although they chose more seldom the subjects related to the field of art. Adolescents with mixed vocational preferences have mostly diversified interests with regard to school subjects. It is noteworthy that adolescents of the “S+A” type noted equally the importance of many disciplines, but did not point any objects in the field of art.

The ability of adolescents to assess adequately those qualities that are required in order to master their chosen profession can also be named as a key indicator of professional self-determination. According to the survey in which schoolchildren were to choose the most valuable professional qualities from the given list, qualities such as attention span (73%), sociability (61%), emotional stability and observation skills (60%) were considered most valuable for a future job.

It is very important to consider from the viewpoint of the types of occupational preferences how adolescents understand the characteristics required for mastering their chosen specialty. Thus, the children of the “M-E”, “M-M”, “M-S”, “N+M”, “N+A” and “E+S” types showed the greatest awareness of valuable professional qualities in accordance with their own professional inclinations (*Tab. 5*). In turn, the adolescents belonging to the “M-N”,

“M-A”, “E+M”, “M+S”, “M+A” and “S+A” types either pay insufficient attention to the necessary professional qualities, or point out those that do not correspond to their inclinations.

Career choice reflects a certain level of individual aspirations, including subjective assessment of one’s own capabilities and abilities. In addition, it is affected by the often unconscious level of an individual’s requirements to the profession. Boys and girls 15–17 years of age often have too high aspirations. However, according to a well-known Russian sociologist I.S. Kon, “it is quite normal and even useful, because it encourages a young person to become mature and overcome difficulties [8, p. 178]. In the course of the study, schoolchildren were offered the same list of professional qualities from which they chose those that are in greater shortage in mastering the future profession. Most often, schoolchildren point out attention span (27%), emotional stability and the degree of development of functional analyzing abilities (24% for each) and observation (16%) among the missing professional characteristics

Adolescents’ choice of the qualities that they “lack” for mastering the profession helps estimate the degree of development of their critical thinking and capacity for reflection, i.e.

Table 5. Distribution of answers to the question: "What qualities are needed for mastering your chosen profession?" depending on the types of professional preferences of the schoolchildren (according to E.A. Klimov)*

Answer options	Professional preferences											
	N	E	M	S	A	N+M	N+A	E+M	E+S	M+S	M+A	S+A
Sociability	100.0	25.0	71.4	40.0	71.4	100.0	100.0	80.0	0.0	0.0	50.0	100.0
Emotional stability	100.0	50.0	85.7	60.0	52.4	100.0	100.0	40.0	100.0	0.0	66.7	33.3
Organizational skills	0.0	0.0	71.4	30.0	38.1	0.0	0.0	20.0	0.0	0.0	33.3	100.0
Aptitude for geometry, physics	0.0	75.0	14.3	30.0	9.5	100.0	100.0	60.0	0.0	0.0	33.3	33.3
Spatial imagination	0.0	50.0	14.3	40.0	23.8	0.0	100.0	20.0	50.0	0.0	16.7	33.3
Technical mindset	0.0	100.0	0.0	50.0	4.8	0.0	0.0	20.0	100.0	0.0	33.3	66.7
Aptitude for practical work	0.0	25.0	42.9	20.0	28.6	0.0	0.0	20.0	50.0	0.0	33.3	33.3
Observation skills	0.0	50.0	42.9	70.0	66.7	100.0	0.0	40.0	100.0	100.0	66.7	33.3
Attention span	0.0	75.0	85.7	80.0	61.9	100.0	100.0	80.0	100.0	100.0	66.7	66.7
Aptitude for observations	100.0	0.0	42.9	70.0	28.6	0.0	0.0	60.0	100.0	0.0	33.3	66.7
Need for motor activity	0.0	0.0	42.9	20.0	14.3	0.0	0.0	40.0	0.0	100.0	83.3	66.7
Aptitude for mathematics (abstract thinking)	0.0	100.0	28.6	50.0	33.3	0.0	100.0	80.0	50.0	0.0	16.7	66.7
Propensity for generalization	0.0	0.0	28.6	50.0	23.8	0.0	0.0	0.0	50.0	0.0	50.0	33.3
Propensity for sedentary work	0.0	25.0	0.0	10.0	4.8	0.0	0.0	20.0	0.0	0.0	16.7	33.3
Visual creative thinking	100.0	25.0	28.6	20.0	33.3	0.0	100.0	20.0	0.0	0.0	0.0	33.3
Vivid imagination	0.0	0.0	28.6	0.0	47.6	100.0	100.0	0.0	50.0	0.0	66.7	33.3
Aptitude for creativity	0.0	25.0	28.6	10.0	57.1	100.0	100.0	0.0	0.0	0.0	83.3	33.3
Development of functional analysing abilities (eyesight, hearing, sense of smell, precision, coordination of movements)	100.0	0.0	42.9	40.0	38.1	100.0	100.0	60.0	100.0	100.0	50.0	33.3

* The question suggested the possibility of selecting multiple answers, so neither of the columns adds up to a total of 100.
Note. Green represents the selected school subjects corresponding to the type of professional preferences, red – those that do not correspond to the type of professional preferences, grey – unselected options.

for introspection, and also for the understanding of the nature of professional activity and its content. Answering the question "What qualities do you lack that would be necessary for mastering your chosen profession?", in most cases, the students mentioned characteristics that

are not fully consistent with their types of professional preferences (*Tab. 6*), which may indicate a diffuse nature of professional identity and its immaturity. The children of the "N+A" type pointed out the options that were most adequate to their own inclinations.

Table 6. Correlation between the professional preferences of schoolchildren (according to E.A. Klimov) and answers to the question: “What qualities do you lack that would be necessary for mastering your chosen profession?”*

Answer options	Professional preferences (test developed by E.A. Klimov)											
	N	E	M	S	A	N+M	N+A	E+M	E+S	M+S	M+A	S+A
Sociability	0.0	0.0	14.3	10.0	14.3	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Emotional stability	100.0	25.0	14.3	10.0	33.3	0.0	0.0	0.0	100.0	0.0	16.7	33.3
Organizational skills	0.0	0.0	14.3	10.0	19.0	100.0	0.0	0.0	0.0	0.0	16.7	0.0
Aptitude for geometry, physics	0.0	0.0	14.3	30.0	0.0	0.0	0.0	20.0	0.0	0.0	16.7	0.0
Spatial imagination	0.0	0.0	14.3	10.0	9.5	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Technical mindset	0.0	25.0	28.6	10.0	9.5	0.0	0.0	20.0	0.0	0.0	0.0	0.0
Aptitude for practical work	0.0	0.0	0.0	0.0	14.3	100.0	0.0	0.0	0.0	0.0	16.7	0.0
Observation skills	100.0	25.0	0.0	0.0	14.3	0.0	0.0	20.0	50.0	0.0	50.0	0.0
Attention span	0.0	50.0	28.6	0.0	23.8	0.0	100.0	20.0	100.0	0.0	50.0	33.3
Aptitude for observations	0.0	0.0	28.6	10.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7
Need for motor activity	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aptitude for mathematics (abstract thinking)	100.0	0.0	14.3	10.0	23.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Propensity for generalization	0.0	0.0	0.0	0.0	9.5	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Propensity for sedentary work	0.0	25.0	0.0	20.0	9.5	0.0	0.0	20.0	0.0	0.0	0.0	0.0
Visual creative thinking	0.0	25.0	0.0	0.0	19.0	0.0	100.0	0.0	0.0	0.0	16.7	0.0
Vivid imagination	0.0	0.0	0.0	10.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0
Aptitude for creativity	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Development of functional analysing abilities (eyesight, hearing, sense of smell, precision, coordination of movements)	0.0	0.0	14.3	40.0	9.5	0.0	100.0	40.0	0.0	100.0	33.3	66.7

* The question suggested the possibility of selecting multiple answers, so neither of the columns adds up to a total of 100.
 Note. Green represents the selected school subjects corresponding to the type of professional preferences, red – those that do not correspond to the type of professional preferences, grey – unselected options.

Having analyzed the answers to the question “How can you develop the qualities necessary for the profession you have chosen?”, we see that self-education (73%) is named by the majority of schoolchildren as the common way to develop professional qualities. In addition, options such as additional

training at other institutions (53%) and meetings with representatives of various professions (48%) proved popular as well.

Besides highly specialized professional characteristics, mastering the chosen profession requires universal human qualities that would help achieve success in any activity, including professional

activity. Judging by the results of a focus group study of schoolchildren from the 10th – 11th grades, they most often name the following main criteria for the success of an individual: dedication, motivation, ability not to be satisfied with what has already been achieved, happy family, good job that one enjoys doing, financial wealth and respectable position in society. However, according to the respondents, personal development and success can be hindered by laziness, inability to organize their time, lack of motivation, conflicts in the family, and relationships with friends.

It is noteworthy that in order to achieve success in their professional career teenagers are willing to sacrifice not only their personal time and hobbies, but also their health. At the same time, they highly estimated the role of health, both physical and spiritual, in the professional development of man and in the achievement of success. This contradiction in their views on health indicates that high school students have weak health-preservation attitudes and they do not understand the contribution of health to overall well-being and human development. However, the majority of adolescents point out that for them it is unacceptable to sacrifice relationships with their loved ones (parents, relatives, friends) in favor of personal and professional growth.

Thus, the study of correspondence of preferable school subjects and the qualities which, in schoolchildren's opinion, are necessary for mastering their chosen specialty to the individual types of professional preferences allows us to make the following conclusion: adolescents learn the subject-related competences much better than professionally significant qualities. That is, currently, adolescents usually have an extremely low awareness about the nature and content of professional activities and about the most important characteristics required in order to work within the chosen specialty.

It is obvious that the current system of vocational guidance at school does not achieve its ultimate goals, namely, it does not help schoolchildren to form a competent professional self-determination according to their individual inclinations and in line with the real needs of society and labor market regarding personnel requirements. Focusing on professional competences, the system for professional guidance pays significantly less attention to personal qualities, and correspondence of interests to opportunities, which in the future may significantly reduce employment satisfaction, and the level of implementation of employment potential and innovative activity.

The results of the study of occupational preferences of adolescents allow us to formulate **a number of recommendations** aimed at addressing these challenges.

I. Modernization of the system for vocational guidance of schoolchildren. It is necessary to improve a set of diagnostic procedures to identify professional attitudes and preferences of schoolchildren.

1. It is necessary to include diagnostic techniques for identifying professional preferences in the list of obligatory measures of vocational guidance work in educational organizations, and take into account their results in the development of educational and career guidance activities. It is necessary to develop special education courses that would contain the methods of forming self-determination skills, values and motivational attitudes in schoolchildren so as to make sure that their chosen future profession corresponds to their professional dispositions, traits and individual preferences.

2. Given the significant psychological and age-related differences in the level of professional self-determination of schoolchildren, their psychological and pedagogical support should be built in stages, with the gradual complication and deepening of career guidance activities. So, for example, up to the 9th grade inclusive it is expedient to carry out

activities aimed to help schoolchildren form their personal choice of continuing education, to develop the skill to relate the public purpose of choosing the sphere of future professional activity with their ideals, ideas and real possibilities. In the 10th–11th grades it is necessary to clarify professional choice in terms of the chosen field of study in which the adolescent has a strong interest and ability. In this period, major efforts should be focused on the development of professionally important qualities, individual style of activity, preparation and correction of educational and professional plans, ways to evaluate results and achievements in their chosen activities, self-development and formation of experience of communicative activities [16, p. 213].

3. In addition, in our opinion, one of the major problems consists in the lack of official statistical information on employment of graduates in their specialty in order to track their further professional path. Despite this fact, the indicator “the share of graduates of vocational education institutions employed within their specialty” is a key indicator in the federal program “Development of education” and in the action plan (“road map”) for changes in education [12; 15]. Therefore, education authorities and bodies of state statistics, should develop an indicator that reflects

the employment and work within their specialty of the graduates of institutions of higher, secondary and primary vocational education; they should also develop a uniform methodology for calculating and monitoring the implementation of this indicator, thanks to which it will be possible to monitor employment within the specialty.

II. Formation of the information field with the aim of establishing a balance between the demand for the profession among young people and the supply on the labor market.

1. Theoretical acquaintance with the occupations of different directions within the school courses:

– involvement of the media (television, radio, newspapers) in organizing the activities aimed to develop professional self-determination of adolescents and promote certain occupations (e.g., working occupations) that are currently not very popular among schoolchildren; organization of events, programs, meetings aimed to raise awareness of schoolchildren about typical mistakes made when choosing a profession, and advise them how to make a choice intelligently and consciously, etc.;

– making adolescents familiar with a variety of existing professions within the school educational programs based on individual characteristics identified in the

course of diagnostic procedures (elective courses “In the world of professions”, “Man and profession”, “My choice of a profession”, etc.), and special emphasis should be made on the most popular current occupations on the labor market.

2. Practical acquaintance of schoolchildren with professions on the basis of interaction of labor market subjects.

Due to a low awareness of students concerning the real situation in the labor market, it is necessary to establish a system of cooperation between schools, employment centers and various companies with the aim of increasing students' awareness of in-demand professions and enhancing the interest of future employers in the success of young people's choice of profession. It is possible to implement such interaction by organizing excursions to enterprises, meetings with representatives of different occupations, educational practices, trainings, etc.

With the help of the successful experience of modernizing the system of vocational guidance it will be possible to increase its effectiveness significantly. Successful professional self-realization will help implement the labor potential of schoolchildren to the fullest extent, increase their innovation activity, successful socialization, ensuring sustainable economic development and modernization processes.

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