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## The Formation of a Career Trajectory by Students of Secondary Vocational Education in the Russian Arctic Zone \*

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**Abstract.** The purpose of the article is to identify the features of professional self-determination and formation of career trajectories of secondary vocational education students in the subjects of the Russian Arctic zone, their orientation towards professional implementation in the Arctic zone of Russia. The study is based on the survey of secondary vocational education students in the constituent entities of the Russian Arctic zone in the framework of the All-Russian career guidance lesson “Start your career in the Arctic and the Far East!”. A total of 686 questionnaires of respondents from Krasnoyarsk Krai, Murmansk Oblast, Komi Republic and the Republic of Sakha (Yakutia) were selected for analysis. The results of the study showed that only about a third of students have decided on further plans for building career trajectories. Most students, when shaping their professional future, are guided by personal desires and preferences, as well as by material well-being. Every tenth student does not clearly associate his/her future with employment in the specialty. About a third of students are focused on professional implementation in the Russian Arctic zone. The results of the study can be useful for researchers, specialists in professional self-determination, teachers and consultants of educational institutions of secondary vocational education, as well as authorities in the field of education, labor and employment.

**Keywords:** *student, Arctic zone of the Russian Federation, professional self-determination, career building.*

### Introduction

The formation of a career trajectory is a continuous process that, in a rapidly changing world, forces both students and specialists to assess the current professional position, to form and revise the vector of the desired path of professional development. For students of programs of secondary vocational education (SVE), the vector of a future career is formed already while mastering educational programs of a special discipline, industrial practice and internships; a career trajectory is formed within the educational trajectory. Further, these trajectories can be divided into the track of continuing professional education (training at a higher level of the education system within the same or another specialty) and the track of entering the professional space — the labor market.

In the context of labor resources shortage [1, Stepus I.S., p. 76] and population decrease in the regions of the Arctic zone of the Russian Federation (AZRF), it is necessary to pay attention to the study of the peculiarities of the career trajectories formation of secondary vocational education students. At the same time, it is important to take into account that the formation of a career trajectory is laid in the process of students' professional self-determination. The choice of the pro-

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professional self-realization path includes, according to the authors' interpretation<sup>1</sup>: "comparison of the probable positive and negative consequences of the choice; development of a personal position to the objective conditions that create a situation of choice; determination of life perspective of the individual, and the formation of life plans"<sup>2</sup>. In this study, in accordance with the interpretation of L.B. Schneider [2], we will understand the formation of the career trajectory of SVE students as the active process of building own personal development path in the professional field, accompanied by a sense of personal fulfillment.

The purpose of this article is to identify the peculiarities of professional self-determination and formation of career trajectories of secondary vocational education students in the subjects of the Russian Federation and their orientation towards professional implementation in the Arctic zone of Russia.

### *Research methodology*

According to the legislation, the concept of "Arctic zone of the Russian Federation (AZRF)" is defined by Presidential Decree No. 296 of May 2, 2014<sup>3</sup>. Within the framework of this study, the term "subjects of the Arctic zone of Russia" will be used to refer to the Russian regions, which are territorially, fully or partially, part of the AZ of the Russian Federation. The research results will be presented for the region as a whole. Hereinafter, the definition "subjects of the AZRF" will be used.

The study is based on the results of a survey of secondary vocational education students in the framework of the second All-Russian career guidance lesson "Start your career in the Arctic and the Far East!"<sup>4</sup> held in February – March 2020 by the Budget Monitoring Center. The author of the article was the responsible executor of this project, including developing the program and tools for the sociological part of the project. The algorithm for the work of SVE students in the framework of the lesson was built on the basis of integration of vocational guidance materials with the direction of training students. The survey of students was conducted within the framework of their acquaintance with career guidance and information materials about the Arctic "before" and "after" the lesson. The data was processed and analysed using the program for statistical data processing SPSS and MS Excel.

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<sup>1</sup> Romanov M.S. et al. Professional'noe samoopredelenie studentov SPO: formirovanie motivatsii vyborov i kar'ernykh predpochteniy [Professional self-determination of secondary vocational education students: the formation of motivation for elections and career preferences]. Gumanitarnye, sotsial'no-ekonomicheskie i obshchestvennyye nauki [Humanities, socio-economic and social sciences], 2017. No. 12. URL: <https://www.online-science.ru/userfiles/file/njey7hytywzrcfam0xwu1yftw5ke2nnw.pdf> (accessed 15 December 2020).

<sup>2</sup> Ibid.

<sup>3</sup> O sukhoputnykh territoriyakh Arkticheskoy zony Rossiyskoy Federatsii: ukaz Prezidenta Rossiyskoy Federatsii №296 ot 2 maya 2014 goda (s izmen. na 5 marta 2020 goda) [On the land territories of the Arctic zone of the Russian Federation: Decree of the President of the Russian Federation No. 296 dated May 2, 2014 (as amended on March 5, 2020)]. URL: <http://docs.cntd.ru/document/499093267/> (accessed 15 December 2020).

<sup>4</sup> Internet portal of the All-Russian vocational guidance lesson "Start your career in the Arctic and the Far East!". URL: <http://dv-arctic.labourmarket.ru/> (accessed 15 December 2020).

Within the framework of the lesson, students got acquainted with the employment potential of the speciality they were studying and with the professions in demand within this specialty, leading employers, and internship opportunities in the Arctic regions. The career guidance lesson is aimed at the formation of a conscious understanding of the possibilities of building a prestigious career and life in the Arctic, the formation of a positive image of these territories in the youth environment [3, Simakova A.V.; 4, Simakova A., Pitukhina M., Stepus I., p. 107–117].

Thus, SVE students (1–4 courses) of full-time education of all financing forms of the AZRF subjects were the research object. The features of career trajectories formation among secondary vocational education students have been determined as a subject of research. Students filled out questionnaires before and after the lesson. In one volume or another, SVE students of all AZRF subjects took part in the lesson, however, for a more detailed analysis, the most representative regions were selected by the number of students surveyed — the Murmansk Oblast, the Republic of Sakha (Yakutia), the Krasnoyarsk Krai and the Republic of Komi. The dry-hop territories of these subjects, with the exception of the Murmansk Oblast, are partly included in the AZRF. A total of 971 people took part in the survey. Expanding in detail the subject of the study, it is necessary to make a clarification that the features of career trajectories formation of students are determined by the sectoral focus of the training profile. With this clarification, for the analysis, 6 enlarged groups of specialties/areas of training (EGST) were selected out of 38, for which SVE training is conducted in the AZRF subjects. After selection the specialty, 686 questionnaires “before the lesson” and 509 questionnaires “after the lesson” were selected for analysis. The number of survey participants is proportional to the number of students according to the EGST industry characteristics: the majority of respondents are in the field of Engineering, Technology and Technical Sciences — 75.7%, 9% — in the field of Social Science, and 15.3 % — Education and Pedagogical Sciences. The reliability of the survey is 95%.

Table 1

*Characteristics of the implemented sample population of the study for the Krasnoyarsk Krai, the Komi Republic, the Sakha Republic (Yakutia) and the Murmansk Oblast as a whole*<sup>5</sup>

Enlarged group of specialties / areas of training (EGST)	Contingent of students, 2019, people (full-time education) <sup>6</sup>	Number of students surveyed (full-time education), people	The share of students surveyed in the EGST contingent,%	Structure of surveyed students by EGST,%
<i>Engineering, Technology and Technical Sciences (4 out of 19 EGST of SVE system of the AZRF subjects are presented)</i>				
08.00.00 — Construction techniques and technologies	7637	46	0.6	6.7
09.00.00 — Informatics and computer engineering	6116	50	0.8	7.3
15.00.00 — Mechanical engineering	8396	141	1.7	20.6
23.00.00 — Engineering and technology of land transport	12800	282	2.2	41.1

<sup>5</sup> Source: compiled by the author.

<sup>6</sup> The data are given according to the information of the statistical form of Rosstat: Information about the educational organization carrying out educational activities on educational programs of secondary vocational education: Form of state statistical reporting No. SPO-1. Moscow: Rosstat, 2019.

<i>Social Sciences (1 out of 5 EGST of SVE system of the AZRF subjects are presented)</i>				
38.00.00 — Economics and Management	6484	62	0.9	9
<i>Education and Pedagogical Sciences (all EGST of SVE system of the AZRF subjects are presented)</i>				
44.00.00 — Education and pedagogical sciences	5467	105	1.9	15.3
Total	46900	686	1.5	100

The formation of a strategy for building a future career can also depend on the course of study. The duration of training in SVE educational programs is usually 3 years; four-year training is carried out for certain educational programs if the student enters an educational institution after the 9th grade. Students of all courses of study took part in the survey, 31.3% of them study the first year, 35% — the second one, 28.6% — the third, and 5.1% — the fourth year.

The results of the study, due to their small representativeness, can be disseminated only for the enlarged groups of specialties / areas of training presented in the study.

### ***Features of professional self-determination of SVE students***

Professional self-determination of a person is one of the most important stages of growing up. Further educational and career trajectories are formed on its basis. E.A. Klimov described this life stage as “searching for development opportunities, understanding oneself as a full-fledged member of the community of “doers” something useful, a community of professionals” [5]. Studying in the 2–3 course, SVE students get acquainted with the specialty in detail, their interest in professional activity is formed at this stage, and, as a consequence, their professional interest is narrowed to a specific subject area. Students are first exposed to various activities that are components of the future profession and contribute to the formation of professional competencies. At this stage of growing up, young people (students) once again face the need for professional self-determination, but in this case it is not so much a question of choosing a profession as of choosing a general professional path. The choice of training direction in the framework of vocational education is not a prerequisite for future graduates to plan their career trajectory in the specialty for which they have received their diploma. According to the all-Russian study of the Higher School of Economics, “among all the holders of diplomas of secondary vocational education institutions, the share of those working in their specialty is a little over 30%” according to a broad interpretation (educational specialty and actual profession coincide) [6, Gimpelson V. et al., p. 27]. The situation of students' determination with the future profession during the development of the educational program in the SVE system before the demonstration of career guidance materials is interesting for the research profile.

Only 62.9% of future teachers (SVE students of the EGST “44.00.00 — Education and Pedagogical Sciences”) and half of the students of the EGST “15.00.00 — Mechanical engineering” have chosen their future profession. About half of the SVE students of AZRF subjects, enrolled in the programs of the EGST “09.00.00 — Informatics and Computer Engineering” and “23.00.00 — Engineering and Technology of Land Transport”, have decided on their future profession. Every third

student enrolled in the EGST “08.00.00 — Construction Engineering and Technology” and “38.00.00 — Economics and Management” has not decided on the future profession (Fig. 1). Based on the data obtained, the fact that students receive professional education does not guarantee the formation of a career trajectory within the chosen direction of training.

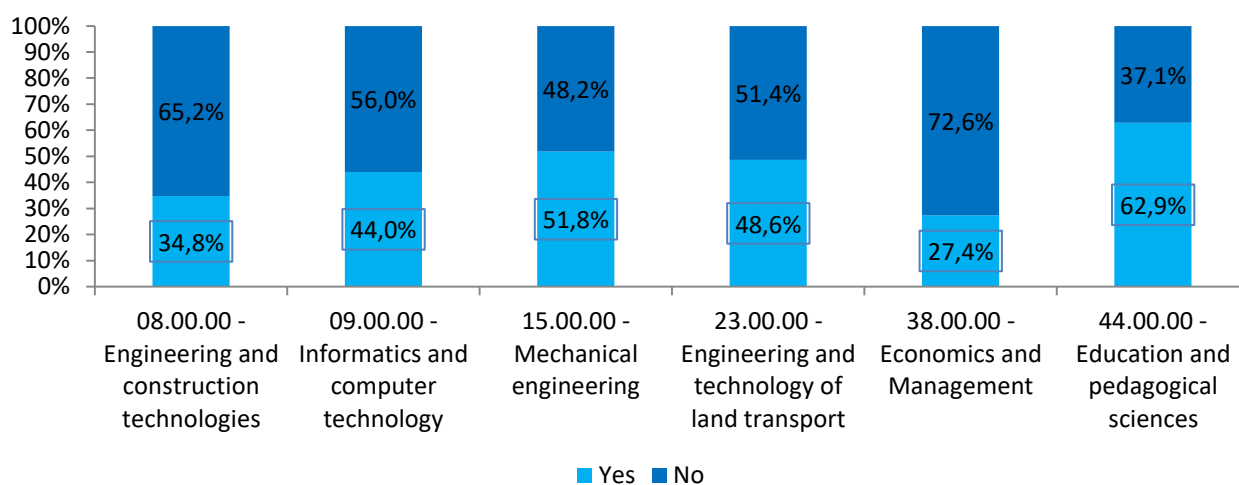


Fig. 1. Respondents' answer to the question "Have you decided on your future profession?" in the context of EGST, in % by column (N = 686, questionnaire before the lesson).

SVE students act as a subject of professional choice in the socio-cultural space. The choice of the future career trajectory is aimed, among other things, at achieving certain positions in the professional sphere and in society as a whole in future. In research of D.L. Konstantinovskiy, it is noted that recently the motivation for choosing training in the secondary vocational education system is moving from “predominance of compulsion in motivation to the rationality of choice” [7, Konstantinovskiy D.L., Popova E.S., p. 41], where students explain their choice by their interest in professional activity and material necessity. In this context, it is interesting to consider the factors that influenced the SVE students' choice of the AZRF subjects. The main factor is the desire of students to work in this professional field (53.1% of students), i.e. they make their choice of future profession based on their own motives and interests, relying on self-development [8, Filonenko V.I. et al, p. 293]. The economic factor is also one of the most important when choosing a profession. This factor is significant when choosing a specialty/direction of training from external (demand for a profession in the labor market) and internal (financial situation of students and their families) points of view: “the demand for specialists of this profession in the labor market” was chosen by 31.3% of students and “the possibility of free-of-charge education” — 35.4% of students (Fig. 2). When choosing a profession, almost every fourth student of secondary vocational education in the AZRF subjects, when choosing a profession, paid attention to the prestige of the profession, which is also manifested in the amount of wages in the labor market. The choice of future profession and place of study of every fifth student was determined by an indifferent position — “I didn't care where to go”, and for 16.4% — it was important to get a professional education close to home.

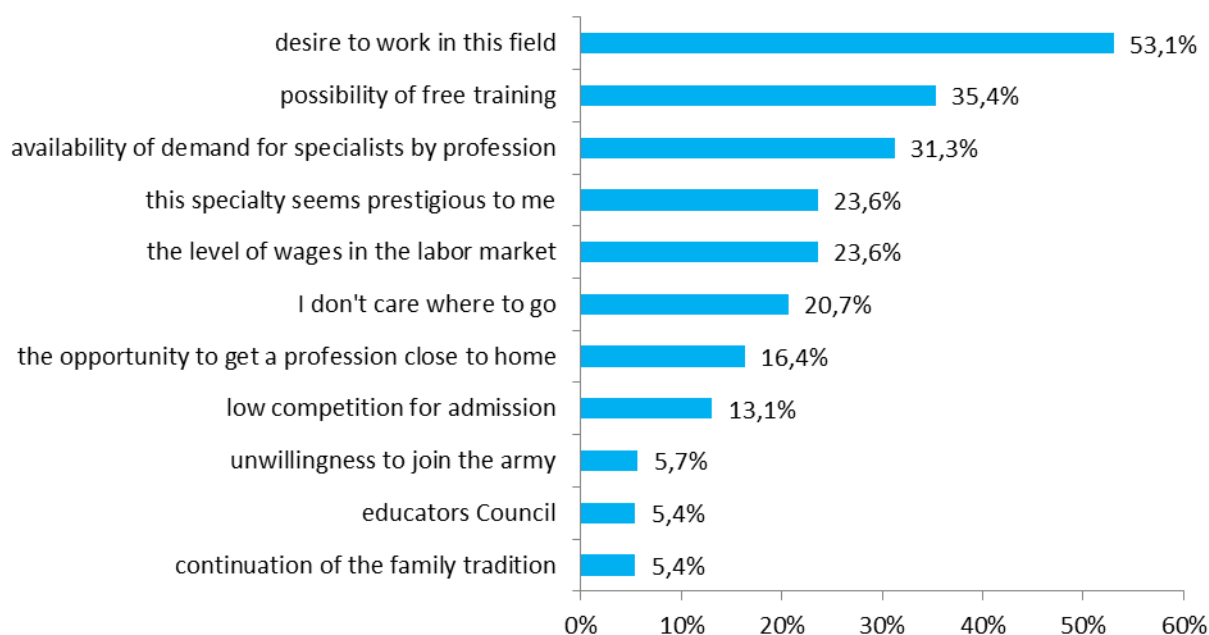


Fig. 2. The main reasons why SVE students of AZRF subjects chose to study in their specialty / direction of training (N = 686, questionnaire before the lesson).

The results obtained on the factors of choosing the profession of SVE students of AZRF subjects are similar to the results of similar all-Russian studies, in which the main way in choosing a strategy for obtaining vocational education in the vocational education system combines factors of interest in the chosen profession and material necessity [9, Konstantinovskiy D.L., Popova E.S., p. 12].

Getting a professional education is not only an element of social, but also territorial mobility — “migration biography” [10] begins with the choice of a new place of study. Among SVE students of AZRF subjects, more than half receive vocational education in the place of permanent residence (63.1%), every third student (34.4%) came to study from another district/city, and only 2.5% of the surveyed students came to receive professional education from other regions of Russia. The intraregional type of educational migration is more widespread among SVE students of AZRF subjects, the track of which, as a rule, is directed from remote areas to the center. In this case, the attachment of young people to their native places should be taken into account [11].

Thus, the problem of professional self-determination does not lose its relevance among SVE students, who have already entered a certain professional field, within which they will have to narrow their choice to a certain professional field and profession. In the process of training and vocational guidance activities, a professional orientation is formed, which determines the variety of motives for choosing a profession <sup>7</sup>. During their studies, about a third part of students have decided on their future profession and are therefore thinking about their future career path.

<sup>7</sup> Romanov M.S. et al. Professional'noe samoopredelenie studentov SPO: formirovanie motivatsii vyborov i kar'ernykh predpochteniy [Professional self-determination of secondary vocational education students: the formation of motivation for elections and career preferences]. Gumanitarnye, sotsial'no-ekonomicheskie i obshchestvennye nauki [Humanities, socio-economic and social sciences], 2017. No. 12. URL: <https://www.online-science.ru/userfiles/file/njey7hytywzrcfam0xwu1yftw5ke2nnw.pdf> (accessed 15 December 2020).

### Formation of SVE students' career trajectory

One of the key stages in career development is the transition from studies to work. Secondary vocational education is often considered by students as the initial stage of professional development [9, Konstantinovskiy D.L., Popova E.S.]. At the same time, obtaining an SVE diploma expands employment opportunities for graduates and their professional skills development. About 30% of students in the secondary vocational education system of the AZRF subjects plan to continue their education at a higher level and to work, only 6% of those who plan to improve their professional skills are not oriented towards a job during their studies (Fig. 3). It is important to note that for graduates of vocational education and training programmes for skilled workers and clerks, the next step in improving qualifications is SVE under the programs of mid-level specialists, and for the latter — the higher education system. The educational track and the social mobility channel “to the university through college” is popular among young people [12, Alexandrov D.A. et al; 13, Cherednichenko G.A.], according to which, on average, 31% of SVE graduates of programs for the preparation of mid-level specialists enter universities immediately after graduation from college<sup>8</sup>. Every fourth graduate, after receiving a diploma, plans to join the ranks of the Armed Forces of Russia (military service), every fifth graduate will get a job. Only 7.5% of SVE students did not decide on plans after completing their studies.

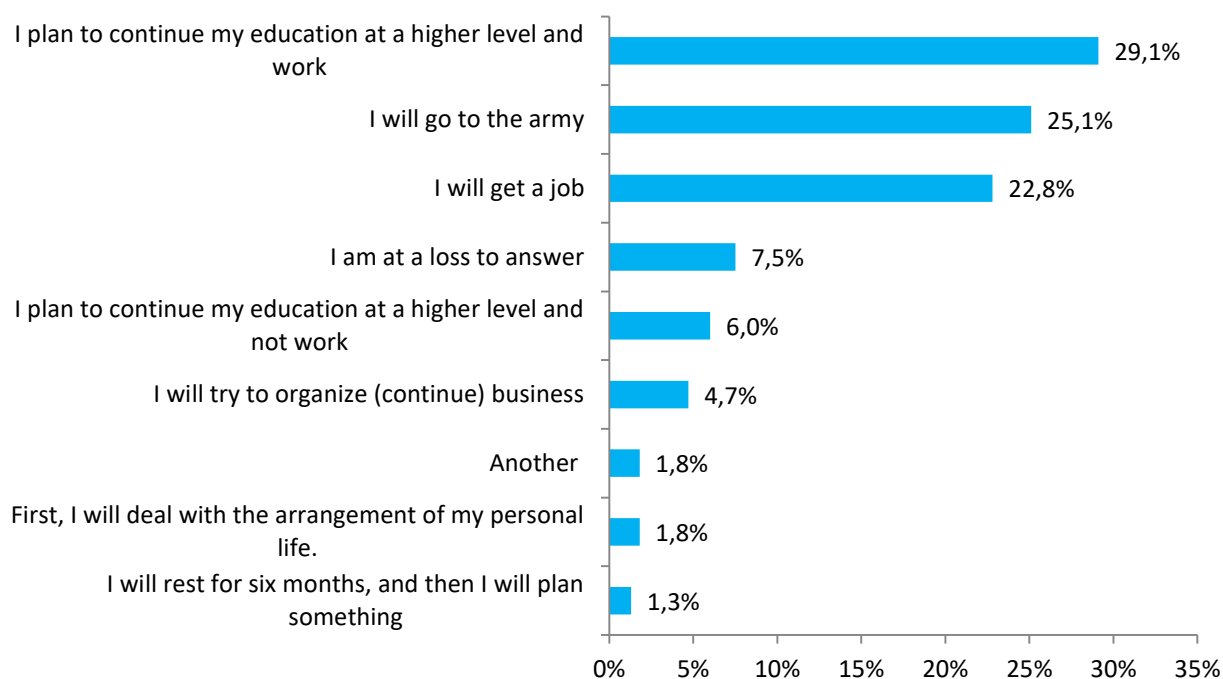


Fig. 3. Plans of students of AZRF subjects after receiving SVE diploma, (N = 686, questionnaire before the lesson).

<sup>8</sup> Среднее профессиональное образование: состояние и вызовы. Мониторинг экономики образования. Информационно-аналитические материалы по результатам социологических исследований [Secondary vocational education: state and challenges. Monitoring the economics of education. Information and analytical materials based on the results of sociological research]. Высшая школа экономики [Higher School of Economics], 2016. Iss. 26. [https://www.hse.ru/data/2016/07/06/1116716354/Выпуск%2026.%20Среднее%20профессиональное%20образование%20\\_состояние%20и%20вызовы.pdf](https://www.hse.ru/data/2016/07/06/1116716354/Выпуск%2026.%20Среднее%20профессиональное%20образование%20_состояние%20и%20вызовы.pdf) (accessed 17 December 2020).



Successful employment of graduates is an indicator of the effectiveness of training and the relevance of training to labour market demand. However, the employment of graduates not in their specialty leads to the devaluation of the diploma and to negative consequences in the education system, the labor market and society as a whole. As the all-Russian studies show: “About 40% of SVE graduates do not work in the profession they have received and occupy mainly jobs that require a lower qualification level than they acquired as a result of training, and with a lower salary than was expected” [14, Dudyrev F.F. et al, p. 122].

Among SVE students of the AZRF subjects, 54% of the respondents plan to work in the future in their specialty, every third one (34.2%) has not yet decided on their choice, and approximately every tenth student (11.8%) does not associate their studies with further employment in the received specialty. If we consider the situation in the context of specific EGST, the most alarming are the data on the EGST “38.00.00 — Economics and Management”, where 23.3% of the surveyed students do not plan to implement the acquired knowledge and skills in the labor market, and every third one has not made the choice (Fig. 4). According to the EGST “09.00.00 — Informatics and Computer Engineering”, approximately every fifth student (17.1% of the respondents) does not plan to work in the specialty they receive, and 46.3% have not decided on their professional future. The intentions of SVE students of the AZRF subjects to find a job in their specialty look more optimistic in the EGST “44.00.00 — Education and Pedagogical Sciences” and “08.00.00 — Engineering and Construction Technologies”: 55.7% and 65.6%, respectively.

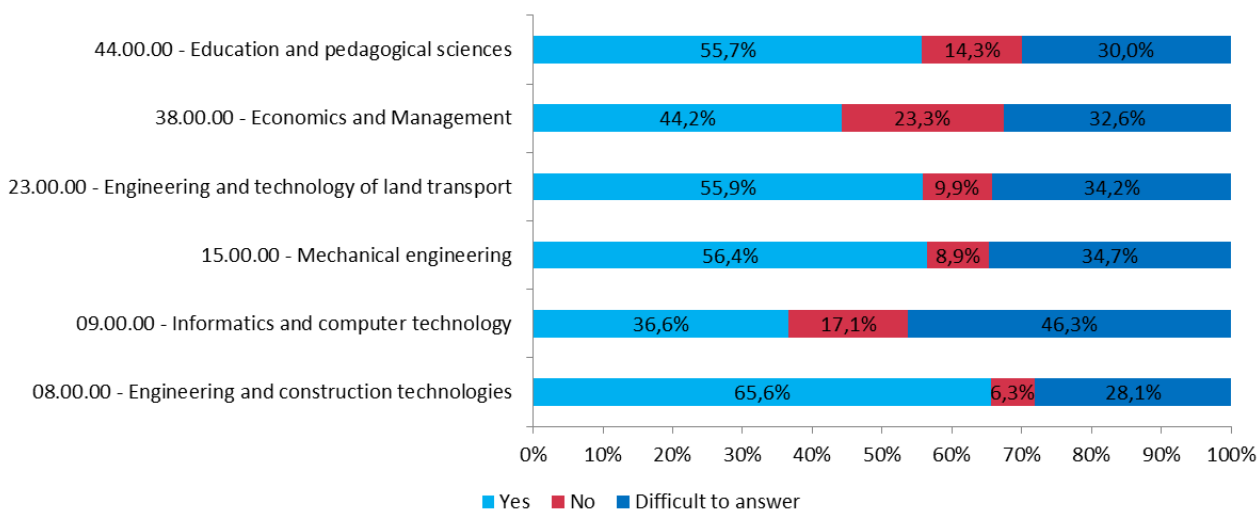


Fig. 4. “Do you intend to work according to the received speciality?”, in % according to EGST (N = 509, questionnaire after the lesson).

According to the research, most often, SVE graduates in the group of professions “health care” (94.1% of graduates), “education and pedagogy” (75.4% of graduates) and “service industry” (73% of graduates) find a job according to their profession [15, Klyachko T.L., Semionova E.A., p. 119–120].

Choosing one or another career trajectory, SVE graduates rely on their own preferences, values and motives. More than half of the graduates care about professional and career growth prospects (66.4% of respondents), a high salary (57.9%), financial stability and reliability of the



employing company (51.1%), and acquisition of new experience and knowledge (45.9%). Only for every third student, when choosing a place of work, along with the importance of the working regime (29.4%) and the team atmosphere (26.6%), the main requirement is the correspondence of the proposed place to the profession obtained (28.6%).

Within the framework of the study, after a career guidance lesson, SVE students of the AZRF subjects were asked to evaluate the possibility of building a successful career in the Arctic (identifying a subjective assessment based on their own ideas) and to express their preferences about starting a labor activity in the Arctic territories (identifying personal desires and interests of students). Every third SVE students of the AZRF subjects considers that it is definitely possible to build a successful career in the Arctic zone of Russia, another 58.8% are not so sure, but positively assess such opportunity, almost every tenth student (12.7%) doubts this success (Fig. 5).

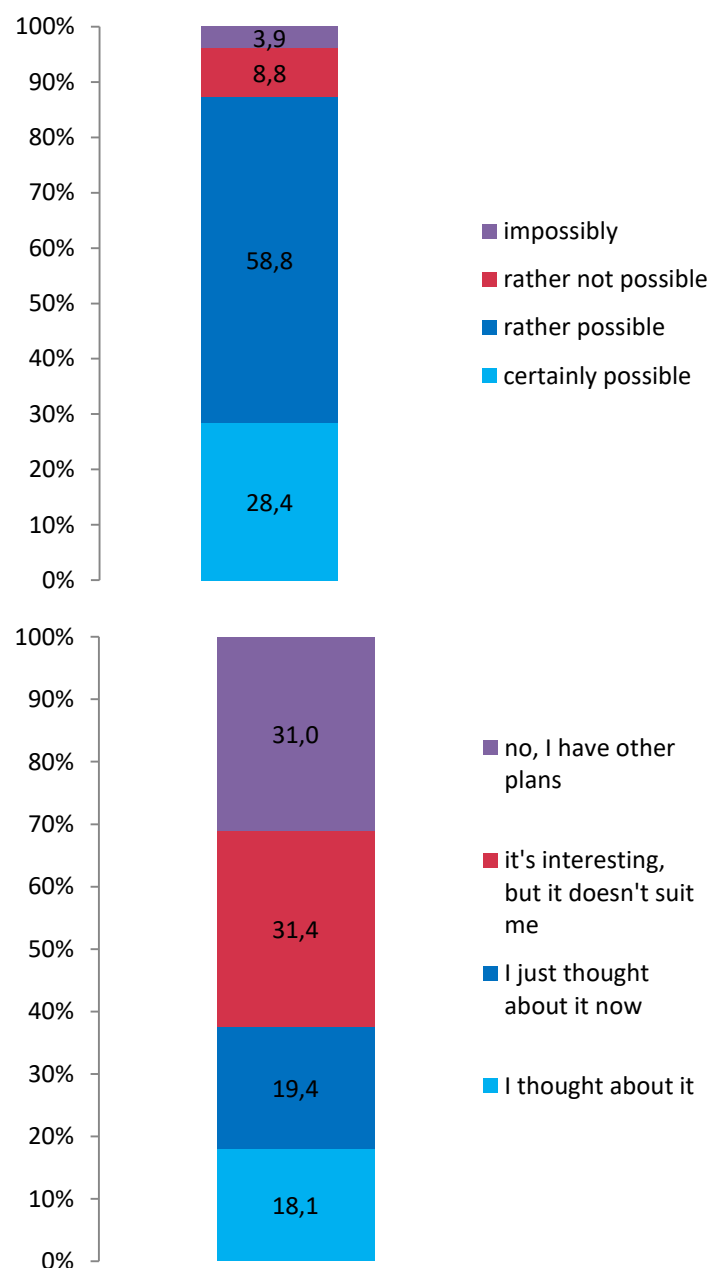


Fig. 5. SVE students' assessment of the opportunities for building a successful career in the Arctic and their desire to start a career in the Arctic, in % by column (N = 509, questionnaire after the lesson).

Every fifth SVE students of the AZRF subjects was going to start the career in the Arctic even before participating in a career guidance lesson (18.1%), every fourth student thought about this precisely after participating in the lesson (19.4%), every third student got interested in working in the Arctic, but there is a lack of confidence that this is suitable for him (31.4%). Every third student answered unequivocally that he has other plans (31%), which may also include employment, continuing education and military service. After one career guidance lesson, the share of students who have decided on their choice of profession and career path increased by 3%, the share of those who have a general idea of what they will do in the future increased by 3%, and the proportion of those who are not sure whether they will work in their specialty decreased by 5% (Fig. 6).

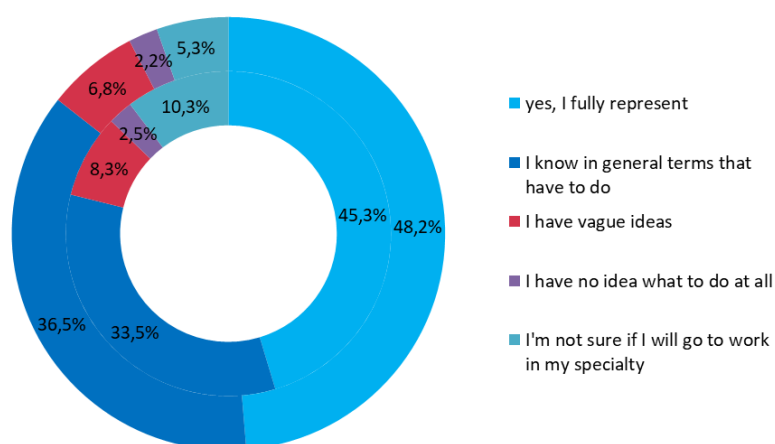


Fig. 6. Students' perception of the nature and content of future professional activity "before" and "after" the career guidance lesson (N = 686 before the lesson and N = 509 after the lesson).

Students who have expressed their direct or potential interest in professional implementation in the Arctic are the target audience for providing additional information about the labor market, career opportunities, living conditions and other social and economic effects [3]. Construction of a "sustainable future" in the Arctic (based on the concept of sustainable development) begins with education [16].

### Conclusion

Half of the interviewed SVE students of the AZRF subjects did not decide on their future profession, and, as a result, they still do not think about building a future career path. For the second half of the students, it is important to work in the professional field in which they receive their education. When forming a career path, students, on the one hand, rely on their own interests, ideas and motives, and on the other hand, pay attention to the situation in the labor market. In this regard, it is important to conduct systematic work with students within the framework of professional self-determination both in existing practical approaches (internships, professional skills competitions, master classes, etc.), and as part of educational activities aimed at informing

students about “benefits” of the acquired professions and career opportunities in the AZRF and expanding of educational opportunities in the territories native to young people [17].

Professional self-determination of SVE students of the AZRF subjects is a topical issue of the vocational education system in the context of timely staffing of the Arctic regions’ economy, especially the existing labor shortage. It is also a “challenge to the non-standard and large-scale labor market of the AZRF” for the development of labor resources and human capital reproduction [18]. At the same time, it is important to monitor the features of professional self-determination and career trajectories of students.

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