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DEVELOPMENT OF DECISION-MAKING SKILLS IN THE EDUCATIONAL PROCESS ACCORDING TO THE TEACHERS

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Purpose: The purpose of this paper is to comprehensively assess the level of skills acquired by school leavers, particularly in the areas of decision making, making decisions under conditions of uncertainty and risk, taking responsibility for one's decisions, making choices, setting goals, striving to achieve them and solving problems. The paper presents the results of a survey that have allowed us to determine the extent to which the pupils have acquired these skills during their education, according to the teachers who assess their development in these areas at different stages of their education.
Design/methodology/approach: In order to achieve this purpose, a quantitative method was used, based on a survey of 1472 primary and post-primary school teachers employed by educational institutions, including primary schools, vocational schools, high schools and technical secondary schools, located in one of 16 regions of Poland – the Kuyavia-Pomerania Province.
Findings: The findings of the conducted research indicate that the level of decision-making, goal-setting and goal-achieving as well as problem-solving skills among school leavers is most often assessed by teachers as average, which is dominant in all types of schools. Detailed analysis shows that better results in development of these skills are observed in high schools and vocational schools rather than among primary school and technical secondary school pupils. Extreme scores, both very high and very low, were rare in all types of schools.
Research limitations/implications: The survey was conducted among teachers from schools in the Kuyavia-Pomerania Province, making the results obtained representative for this region of Poland. At the same time, these results cannot be generalized to pupils from other provinces. Therefore, any conclusions apply exclusively to the surveyed group and region and their usage in a wider context may be limited.
Practical implications: The results of this study can provide valuable insights into the level of decision-making skills of school leavers in the Kuyavia and Pomerania region, which can help to adapt teaching methods to their developmental needs in this area.
Originality/value: This study can make an important contribution to the discussion on developing decision-making skills in the educational process of pupils at various stages of their education.

Keywords: decision making, education system, decision-making skills, level of education, primary and post-primary school pupils.
Category of the paper: Research paper.

1. Introduction

Decision-making is an essential part of management and its processes. There can be no proper management when the decision-making process is flawed. The absence of a properly and adequately defined decision-making process constitutes a significant constraint on operations, entailing exposure to an increase in the level of risks present and their materialization. Decision making is vital not only for taking specific actions but also for their successful completion. In decision making, the leader entrusted with decision-making powers assumes a pivotal role. They must possess a set of traits – both innate and acquired – that allow them to exercise correct judgement of the situation at hand and to develop an appropriate response. Decisiveness in this behavioral sense is undoubtedly a skill that one may or may not possess. In case of decisiveness, we are talking about coincidence of internal and external factors influencing the entire process.

Above all, a certain strength of character, independence of judgement and resistance to external influences that may be used to covertly pursue other agendas are essential. From the perspective of maintaining independence of judgement, proper prioritization and grading of existing and received information and data are crucial. To conduct an effective analysis, a decision maker must possess not only knowledge but also experience, collectively and colloquially known as intuition, which is not a phenomenon beyond the realm of scientific understanding but in fact one based upon it. Appropriate concurrence of these two factors – knowledge and experience – allows the decision-making process to be carried out correctly. Knowledge guarantees a proper analysis of the facts, while experience ensures their correct evaluation – both in terms of the present status and its impact on the future. Complexity of the decision-making process, particularly in situations involving a wide range of stakeholders, requires the consideration of numerous varying perspectives. It is essential for decisions not to be made solely by one individual but also to be based on the knowledge and experience of experts from various fields, opinions of teams and other groups involved in the process (Prorok, 2015, p. 83). Leveraging knowledge and experience plays a crucial part in minimizing the risk of making poor decisions.

This raises the question of where to acquire knowledge and where to gain experience. As a rule, knowledge is acquired through the process of education provided by legally recognized institutions that are constituent parts of general, vocational and academic education systems. Experience, on the other hand, is gained through daily life in various environments (home, school, work) where the degree of interdependence and interrelations shapes the patterns

of our behavior and reactions to specific events. All these elements contribute to the decision-making process, the proper execution of which constitutes a significant factor in our successes and failures.

2. Meaning of Decision-Making Skills

Problem solving and decision making are key skills that play an important role in an effective teaching and learning process (Greenbank, 2010; Beyth-Marom et al., 2012). In education, considerable emphasis is placed on development of these competencies among pupils (Yurtseven et al., 2021, p. 2118; Ratcliffe, 1997; Majeed, 2021). As emphasized by Yurtseven et al. (Yurtseven et al., 2021, p. 2119), pupils assume an active role in the teaching and learning process, achieving results through effective utilization of decision-making skills. Decision making is considered to be one of the stages of problem solving. It is a process wherein the objective is to choose the best solution (Malewska, 2014, p. 127). Decision making is the process of choosing between two or more options (Greenbank, 2010) which can either be easy or difficult for the decision maker to select (Sever, Ersoy, 2019).

The art of decision making is a skill of particular import to pupils (Whitty, Wisby, 2007). It is recognized as one of the key higher-order thinking skills, essential for the academic as well as personal lives of pupils. It allows them to assess the validity of various outcomes and to choose the best alternative from among several available options (Majeed, 2021, p. 78). As they transition into adulthood, young people face the challenge of making complex decisions regarding their future (Zaleszczyk, Kot, 2016, 2019). Among these are choices related to education and career planning (Klementowska, 2016, p. 127; Eriksson et al., 2018; Brzezińska et al., 2016). The decision to choose a future profession constitutes one of the most consequential life choices and is subject to the same decision-making processes as other choices (Zaleszczyk, Kot, 2019). Therefore, it is essential for pupils to be cognizant of the available options and the consequences entailed by the decisions they make (Jaracz, Borkowska, 2010).

In this process, career counselors and teachers play a pivotal role in helping young people navigate this complex reality and supporting them in making choices about their future (Eriksson et al., 2018, p. 1900; Townsend, 2012, p. 114; Fischer, Taylor, 2012). As Townsend points out, the collaboration between teachers and pupils is fundamental for effective acquisition of knowledge, which translates into pupil success (Townsend, 2012, p. 114). In the educational process, teachers should enable pupils to make independent decisions as frequently as possible (Wilsz, 2018, pp. 176-177). Teachers' awareness in terms of the choice of teaching methods and the manner in which they are applied has a great impact on the quality of their work (Sterna, Strzemieczny, 2012, p. 127).

In addition, an important function in developing decision-making skills is played by curricula (Sever, Ersoy, 2019). Consequently, these skills should be conveyed at all stages of education and in all curricula in a coherent, direct and comprehensible manner (Sever, Ersoy, 2019, p. 167).

3. Methodology of Empirical Research

The objective of the study was to assess the impact of education on development of pupils' skills in the areas of decision making, making decisions under conditions of uncertainty and risk, taking responsibility for one's decisions, making choices, setting goals, achieving them and solving problems, as judged by the teachers, according to the type of school in which the respondents taught, namely high school, vocational school, primary school or technical secondary school.

The survey was conducted as part of a study of social attitudes towards transplantation, which included an additional module on development of decision-making skills in youth education. A total of 1,472 primary and post-primary school teachers in one of 16 regions of Poland, the Kuyavia-Pomerania Province, took part in the study. The research instrument was a survey questionnaire. The method of data collection from primary sources was an online survey. The survey was conducted electronically using the Google Forms tool in the month of February 2024.

This paper presents selected aspects of the conducted study which, among others, include answers to the following research questions: what is your assessment of the level of skills acquired in the educational process by school leavers in the following areas: (1) decision-making skill, (2) decision-making skill under conditions of uncertainty and risk, (3) ability to take responsibility for one's decisions, (4) choice-making skill, (5) goal-setting skill, (6) goal pursuit skill, (7) problem-solving skill.

4. Research Results

The subject of the study was a group of teachers working in schools and educational institutions, including primary schools, vocational schools, high schools and technical secondary schools. A total of 1472 teachers, including 1274 women (86.55%) and 198 men (13.45%), directly participated in the survey. The predominant group (600 respondents, 40.76%) were teachers aged 40-49 and the second largest group (491 persons) were teachers aged 50-59 (33.36%). The smaller age groups were teachers aged 30-39 (247 persons, 16.78%)

and the least numerous group – teachers aged 18-29 (35 persons, 2.38%). The group of teachers aged 60 and above included 99 persons, which accounted for 6.73% of the sample under study. It can therefore be assumed that all schools and institutions are dominated by teachers in the age bracket of 40 to 59, accounting for approx. 74.00% of all teachers (Table 1).

Table 1.
Respondents grouped by age and school type [%]

Breakdown	Groups				
	18-29 y.o.	**30-39 y.o.**	**40-49 y.o.**	**50-59 y.o.**	**60+ y.o.**
High school	0.61%	1.49%	4.48%	4.96%	0.75%
Vocational school	0.00%	0.41%	1.97%	1.02%	0.14%
Primary school	1.29%	11.55%	27.11%	23.78%	4.55%
Technical secondary school	0.48%	3.33%	7.20%	3.60%	1.29%
TOTAL	**2.38%**	**16.78%**	**40.76%**	**33.36%**	**6.73%**

Source: own work based on conducted research.

The second question of the demographic section aimed to determine the type of school in which the teachers work and teach. The largest group in the survey comprises primary school teachers, who constitute 68.27% of the total number of participants (1005 persons). The second largest group consists of teachers from technical secondary schools, representing 15.90% of the respondents (234 respondents). High school teachers make up 12.30% of the study participants (181 persons) and the smallest group is vocational school teachers, who account for 3.53% (52 persons) (Figure 1).

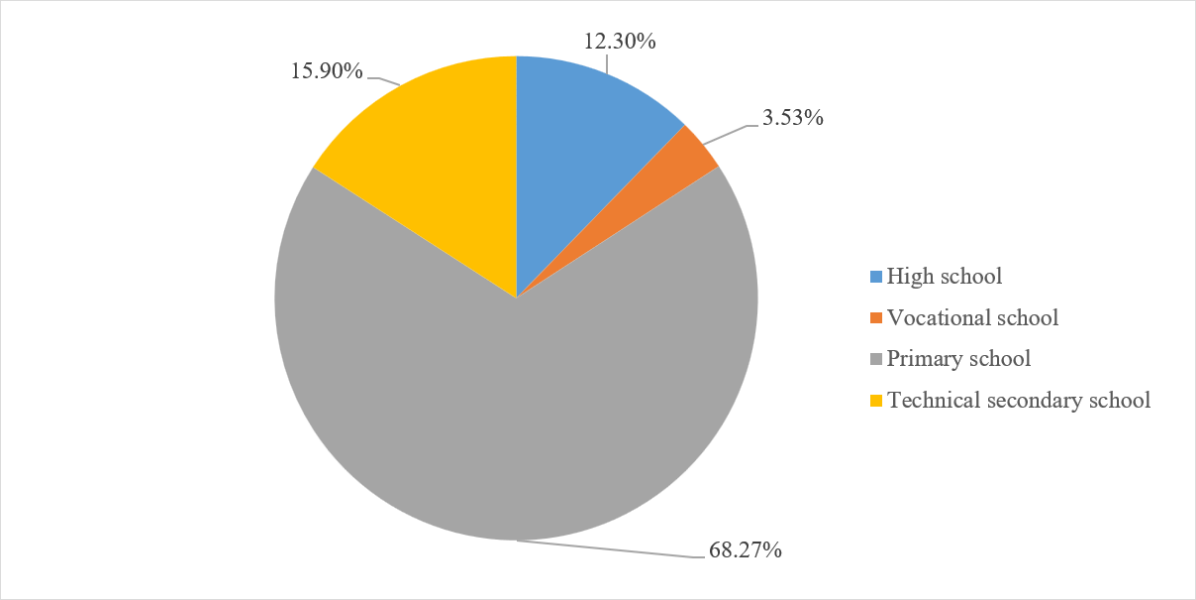

Figure 1. Type of school in which the respondents work [%].

Source: own work based on conducted research.

The first question that the teachers were asked allowed for an assessment of the decision-making skills among school leavers. A vast majority of the teachers (65.06%) rated pupils' decision-making skills as average. In turn, 15.57% of the teachers rated pupils' decision-making skills as low and 14.89% as high. Extreme ratings, both very low (2.31%) and very high (2.18%), were rare (Figure 2).

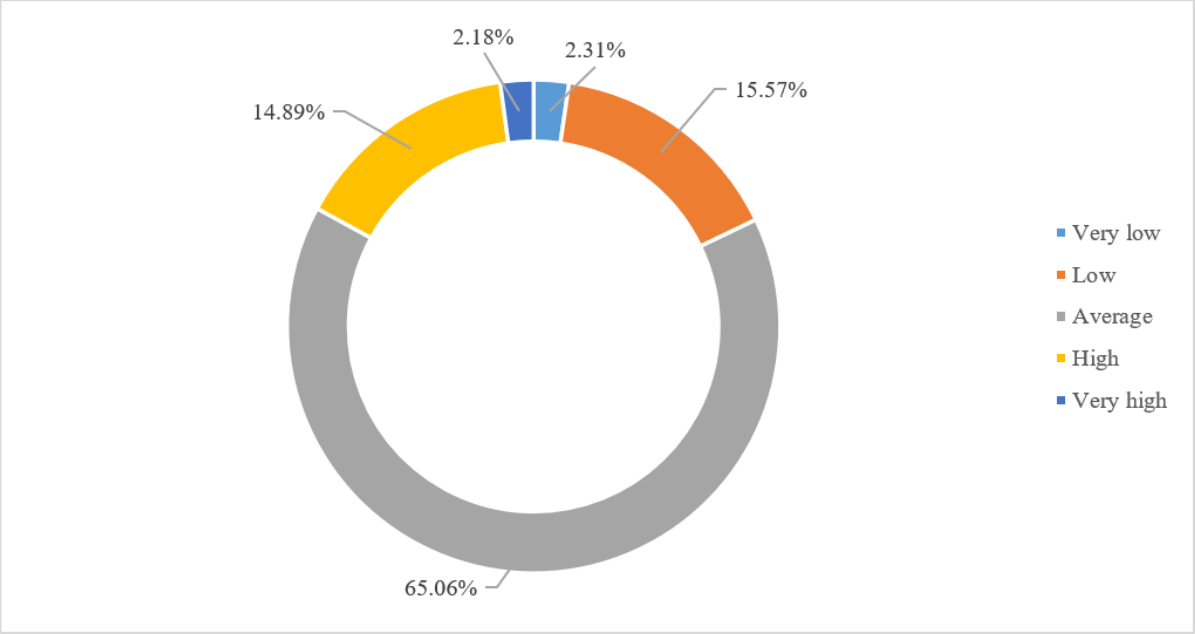

Figure 2. Level of development of the decision-making skill in the educational process among school leavers as rated by all teachers [%].

Source: own work based on conducted research.

The results for the pupils' decision-making skill in the different types of schools show some similarities as well as differences. In each of the schools under analysis, most pupils scored average. In high schools, 58.89% of pupils were rated average and 23.33% were rated high, which is a relatively high result. A low rating was awarded to 13.89% and a very high rating – to only 3.89% of pupils. In vocational schools, 65.38% of pupils received an average rating, 19.23% – high and 9.62% – low. Very low ratings were absent and very high ratings were given to 5.77%. In primary schools, 67.16% of pupils received an average rating, 17.31% – low and only 10.95% – high. Very low ratings accounted for 3.08% and very high ratings – for only 1.49%. In technical secondary schools, 60.68% of pupils scored average, 24.36% scored high, the highest of all types of schools, 10.68% scored low and as few as 2.99% scored very high. High schools and technical secondary schools had a higher percentage of pupils with high ratings, while primary and vocational schools were more likely to have teachers giving low ratings. Extreme ratings (very low and very high) were rare in all types of schools (Figure 3).

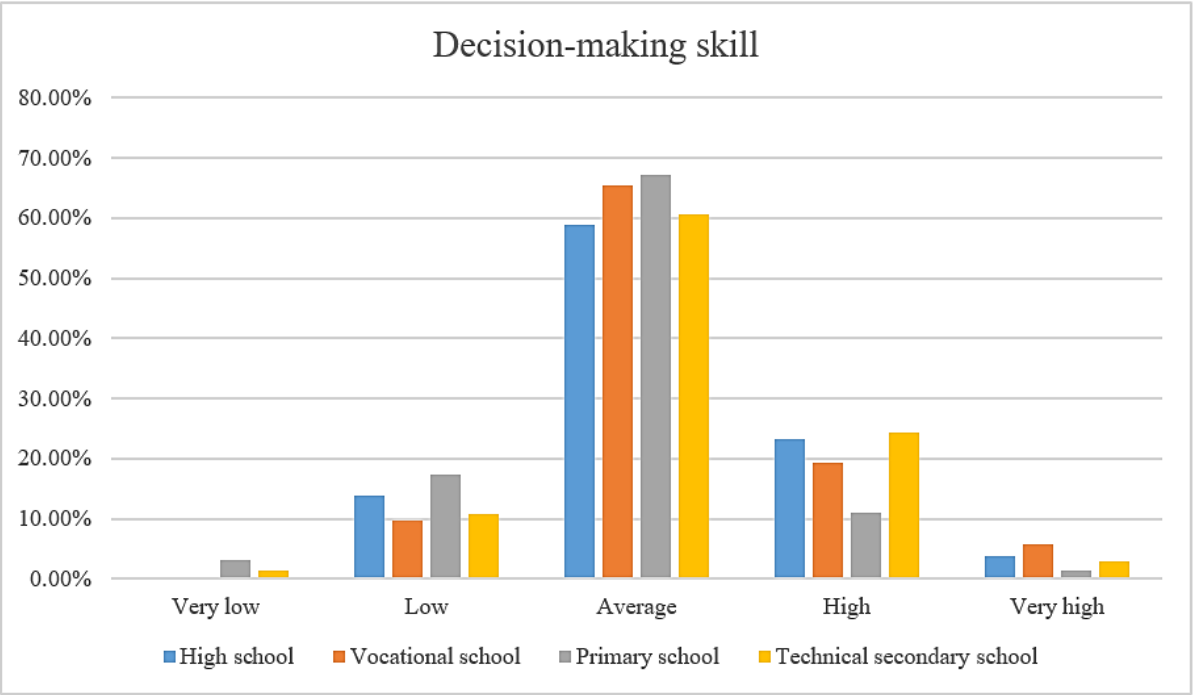

Figure 3. Level of development of the decision-making skill in the educational process among school leavers as rated by teachers, broken down by type of school in which the teachers work [%].

Source: own work based on conducted research.

The next question was about assessment of decision-making skills under conditions of uncertainty and risk. Considering the answers provided by the respondents as a whole, the results reveal that most teachers (46.23%) rated these skills as average. Over one-third of the pupils (36.57%) had a low rating and 8.02% – a high rating (Figure 4).

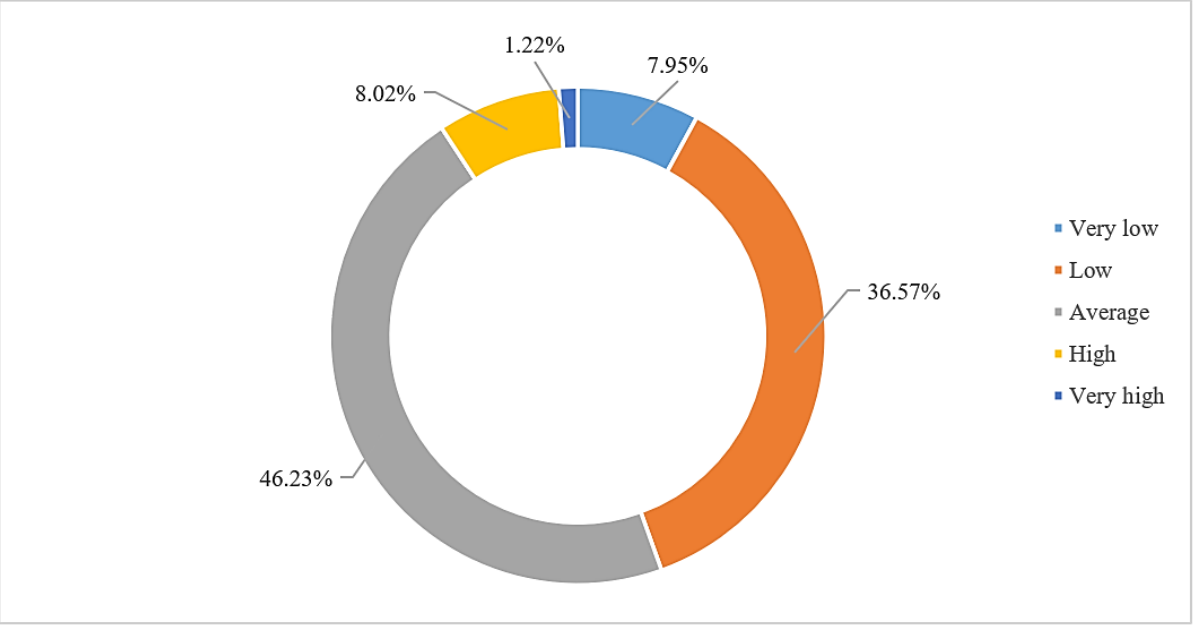

Figure 4. Level of development of the decision-making skill under conditions of uncertainty and risk in the educational process among school leavers as rated by all teachers [%].

Source: own work based on conducted research.

An investigation into acquisition of decision-making skills under conditions of uncertainty and risk shows differences between pupils from different types of school. Primary school pupils demonstrated the lowest levels of these skills, with as many as 46.67% falling into the very low and low categories, as rated by the respondents. High school teachers ranked the level of decision-making skills under uncertainty and risk as low and very low in 43.89% of pupils. Better results were noted in technical secondary schools and vocational schools. In technical secondary schools, as many as 50.43% of pupils achieve an average level of these skills, and in vocational schools this percentage is 48.08%. High and very high levels of competence in decision making are generally less frequent. They are primarily seen in high schools (15.00%) and vocational schools (13.46%), which may reflect favorable conditions in these institutions. In primary schools, on the other hand, only 7.27% of pupils were rated at this level by their teachers (Figure 5).

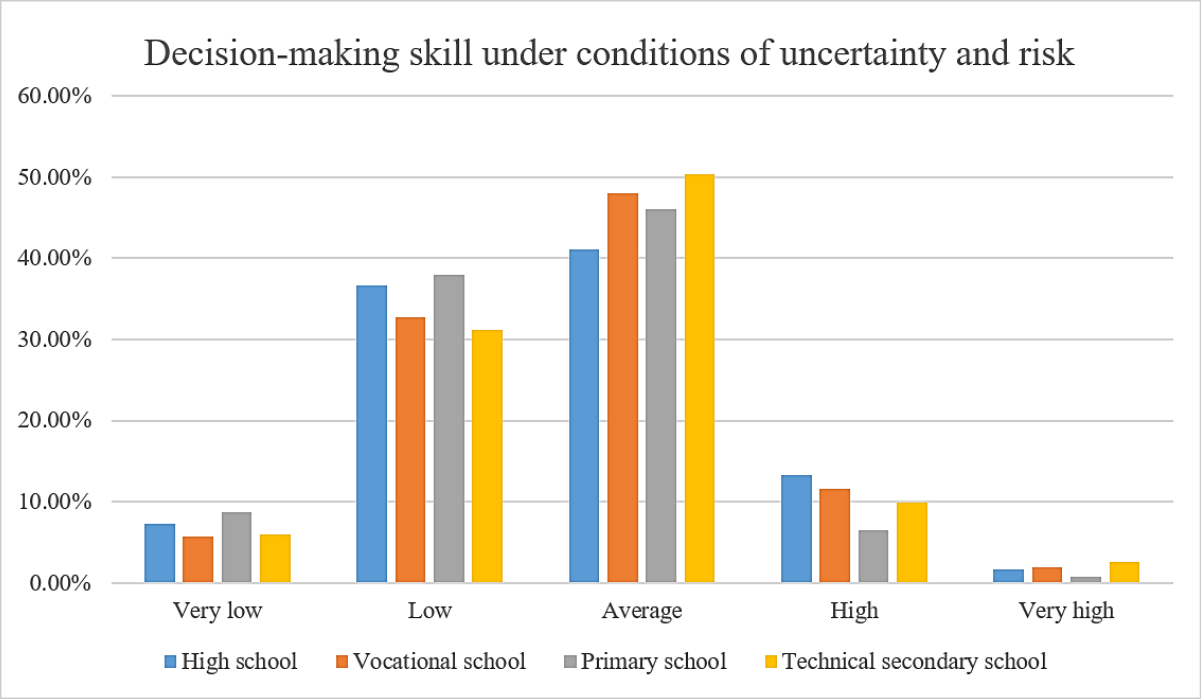

Figure 5. Level of development of the decision-making skill under conditions of uncertainty and risk in the educational process among school leavers as rated by teachers, broken down by type of school in which the teachers work [%].

Source: own work based on conducted research.

It is the opinion of half of the teachers (49.01%) that the level of school leavers' ability to take responsibility for their own decisions can be described as average. Every third teacher (32.77%) believes that the level of these abilities developed during education is low, while only one in ten respondents (10.06%) views them as high or very high (Figure 6).

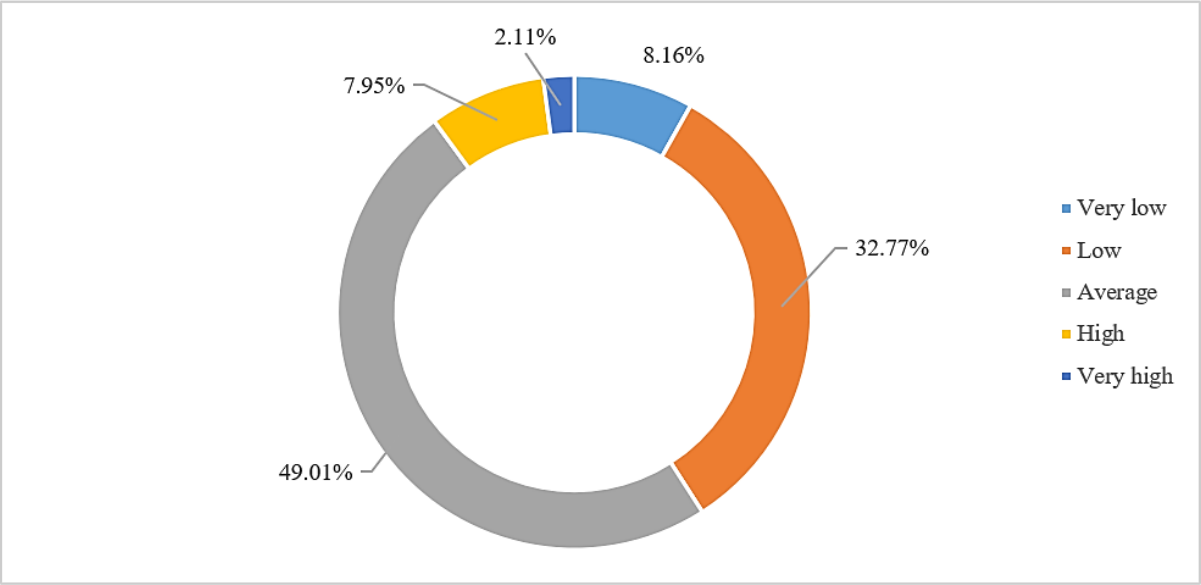

Figure 6. Level of development of the ability to take responsibility for one's decisions in the educational process among school leavers as rated by all teachers [%].

Source: own work based on conducted research.

When analyzed according to the type of school where the teachers work, the survey results demonstrate that the level of pupils' ability to take responsibility for their own decisions varies from one institution to another. In primary schools, teachers tend to rank these skills as average (49.65%) or low (33.23%). A similar tendency can be observed in high schools, where average ratings prevail as well (46.67%), and low levels of acquisition of these skills apply to 30.56% of pupils. In technical secondary schools, the average level of responsibility for decisions is reached by the highest percentage of pupils (50.43%), while low ratings appear less frequently (29.91%). In contrast, low ratings are predominant among teachers working in vocational schools (44.23%), and 38.46% of pupils show an average level of ability in this area. In all types of schools high and very high ratings are relatively rare; nevertheless, the highest levels of skills in respect of responsibility for one's own decisions acquired in the educational process by school leavers was recorded in high schools (11.67% – high and 3.33% – very high) (Figure 7).

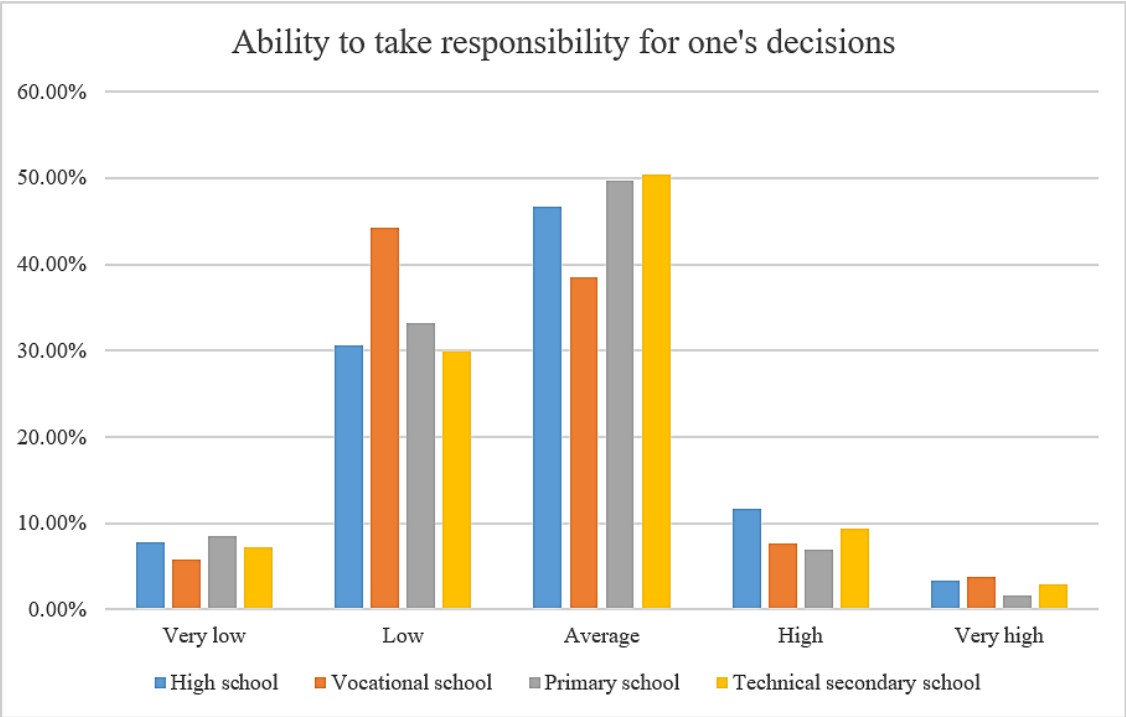

Figure 7. Level of development of the ability to take responsibility for one's decisions in the educational process among school leavers as rated by teachers, broken down by type of school in which the teachers work [%].

Source: own work based on conducted research.

According to the respondents, the level of development of choice-making skills among school leavers is most often rated as average (61.73%). A high level of these competencies was observed in 15.57% of pupils, while a very high level represented the smallest percentage, at only 1.97% (Figure 8).

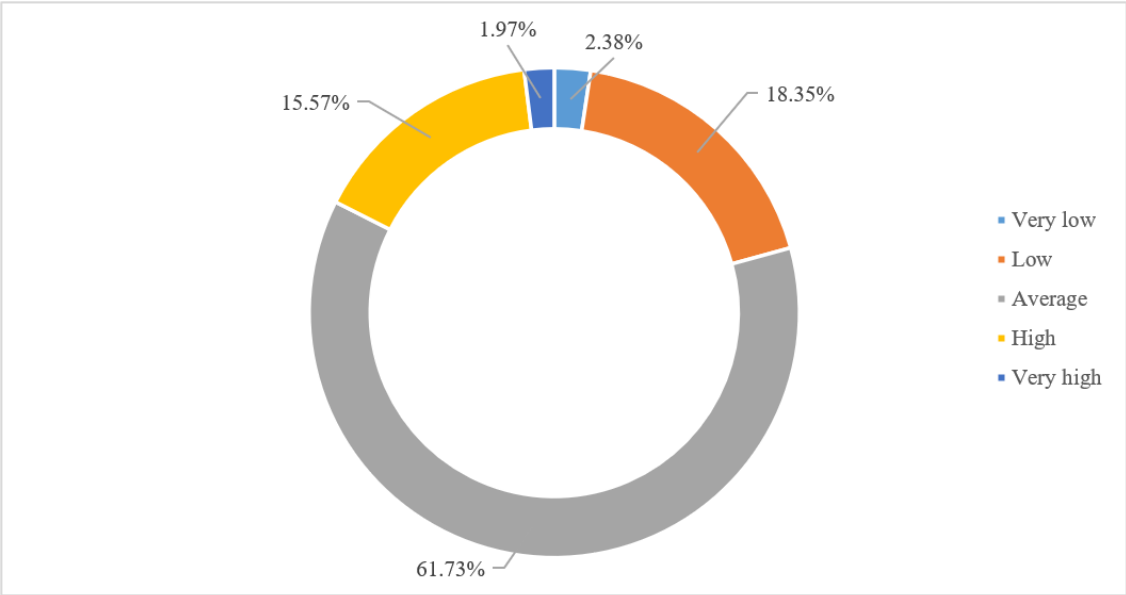

Figure 8. Level of development of the choice-making skill in the educational process among school leavers as rated by all teachers [%].

Source: own work based on conducted research.

The research findings for pupils' decision-making skills show clear tendencies across school types. In each type of institution, average ratings are prevalent, suggesting that pupils are generally reaching a sufficient level in terms of these skills. In primary schools, as many as 63.18% of pupils received an average rating, and in high schools the percentage was 58.89%. In vocational schools, apart from the average rating, there was a noticeably higher percentage of pupils who were assessed at a high level (21.15%). In turn, in high schools there was a clear predominance of high (19.44%) and very high (3.33%) scores, which may indicate that pupils at these schools are better prepared to make responsible decisions in the future. In contrast, average and low ratings prevailed in primary and vocational schools, suggesting a need for greater support for developing these skills in pupils of these types of schools (Figure 9).

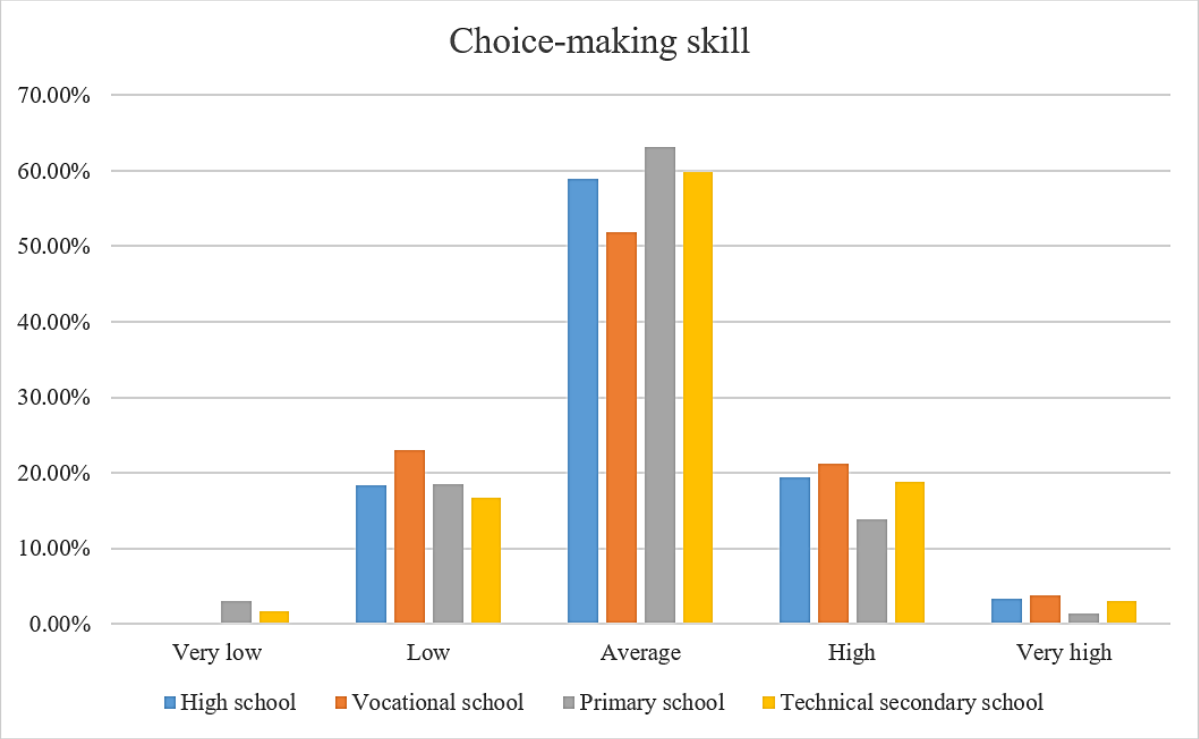

Figure 9. Level of development of the choice-making skill in the educational process among school leavers as rated by teachers, broken down by type of school in which the teachers work [%].

Source: own work based on conducted research.

The next item of the conducted survey was assessment of the level of development of the goal-setting skill in the educational process among school leavers, as perceived by the teachers. A majority of the teachers (56.49%) have assessed these skills as average, with 23.66% of the teachers assessing them as low, which indicates the need for more intensive work on development of goal-planning and goal-setting skills among pupils. Only 14.07% of teachers have rated the pupils' skills as high, and mere 1.97% have rated them as very high (Figure 10).

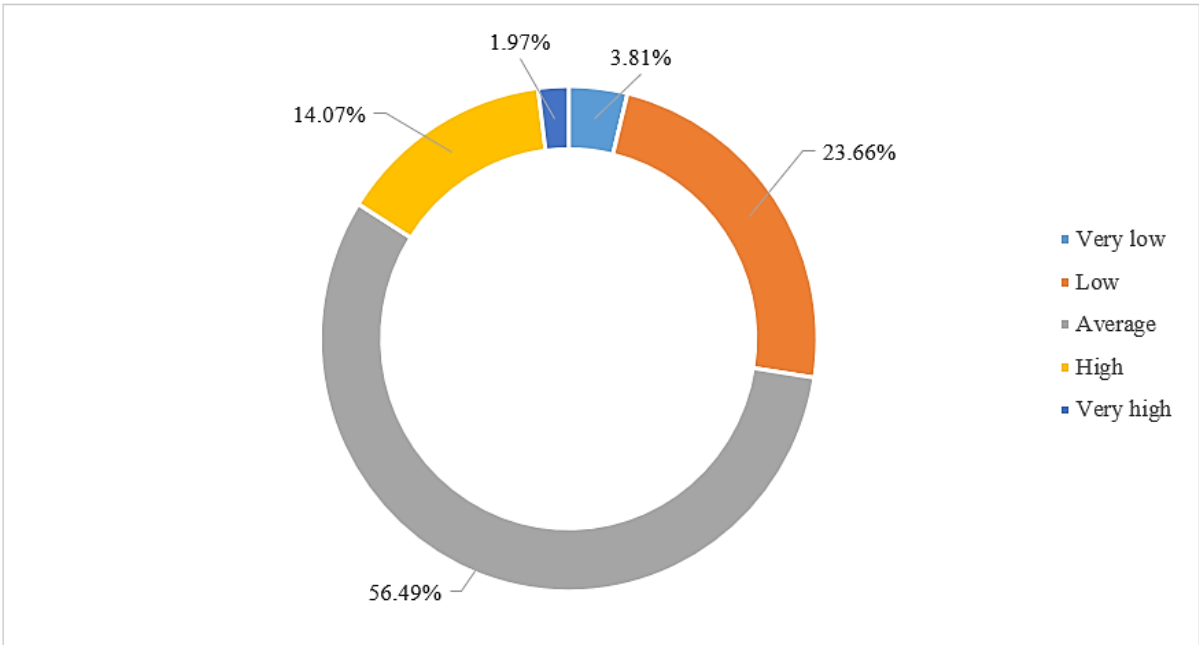

Figure 10. Level of development of the goal-setting skill in the educational process among school leavers as rated by all teachers [%].

Source: own work based on conducted research.

The results of evaluation of the level of goal-setting skills of pupils graduating from different types of schools, as perceived by their teachers, show that average and low ratings prevail. In high schools, 58.33% of teachers have rated these skills as average and 16.67% as low. In vocational schools, 48.08% of teachers have assessed the level of pupils' goal-setting skills as average and 26.92% as low. In primary schools, 57.31% of teachers have rated the skills as average and 24.78% as low. In technical secondary schools, 53.42% of teachers have reported an average level and 23.50% a low level. Further analysis of the findings reveals that pupils graduating from high schools and vocational schools are more likely to achieve high and very high levels of goal-setting skills, compared to pupils from schools of other types. In high schools, 19.44% of teachers have rated these skills as high and 4.44% as very high. In vocational schools, 21.15% of teachers have found the skill level to be high and 1.92% found it to be very high. In comparison, in primary schools only 12.34% of teachers evaluated them as high and 1.39% as very high, and in technical secondary schools 15.81% of teachers reported a high level and 2.56% a very high level. This means that high schools and vocational schools are more effective in supporting the development of goal-setting skills in their pupils (Figure 11).

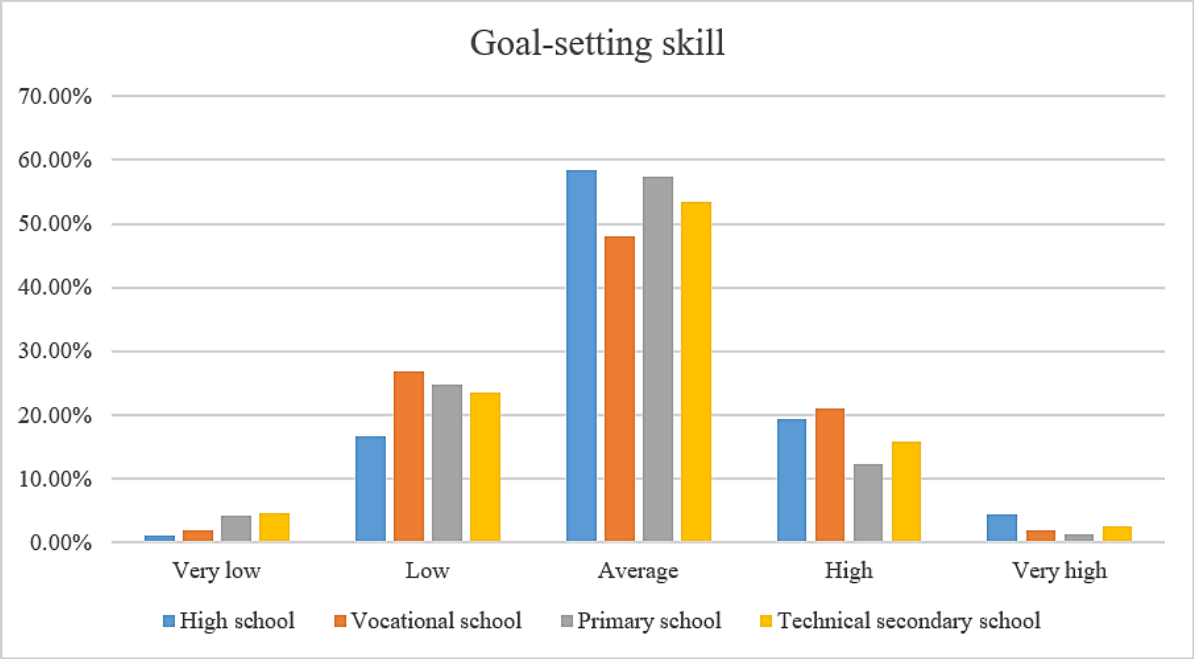

Figure 11. Level of development of the goal-setting skill in the educational process among school leavers as rated by teachers, broken down by type of school in which the teachers work [%].

Source: own work based on conducted research.

An analysis conducted among teachers surveying the level of goal pursuit skills of school leavers shows that there is a majority group of pupils (58.26%) who, according to the respondents, achieve an average level of these competencies. A lower level is exhibited by 23.05% of the pupils, indicating that almost one in four pupils has difficulties in effectively pursuing their goals. In contrast, 12.64% of the pupils achieve a high level of these competencies, with only 2.24% standing out as being at a very high level (Figure 12).

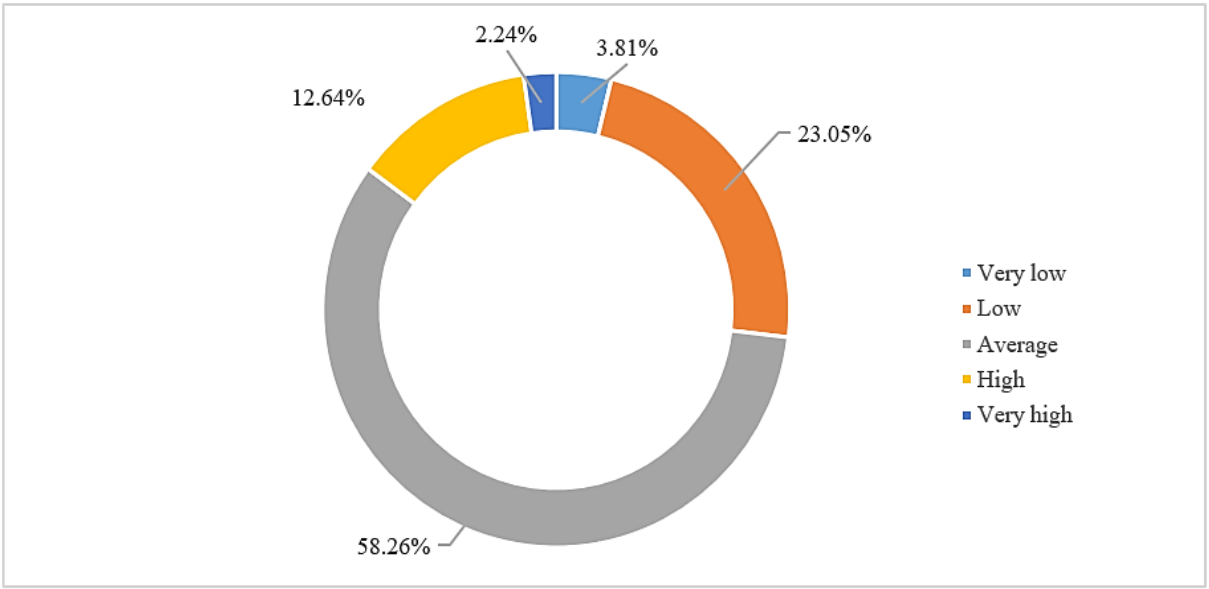

Figure 12. Level of development of the goal pursuit skill in the educational process among school leavers as rated by all teachers [%].

Source: own work based on conducted research.

An analysis of the results concerning the level of goal pursuit skills taking into account the type of school shows that in all institutions the highest percentage of pupils achieve an average level of these competencies. However, according to the respondents, pupils graduating from high schools and vocational schools are more likely to achieve a high or very high level of goal pursuit skills compared to pupils from other school types. In high schools, 22.78% of teachers rated these skills as high or very high, while in vocational schools the percentage was 21.15%. By comparison, in primary schools, only 10.85% of teachers rated these skills as high and only 1.89% as very high. In technical secondary schools, 14.10% of teachers reported a high level and 2.56% a very high level. These results reveal that high schools and vocational schools are more conducive to developing pupils' goal pursuit skills in the educational process compared to primary schools and technical secondary schools (Figure 13).

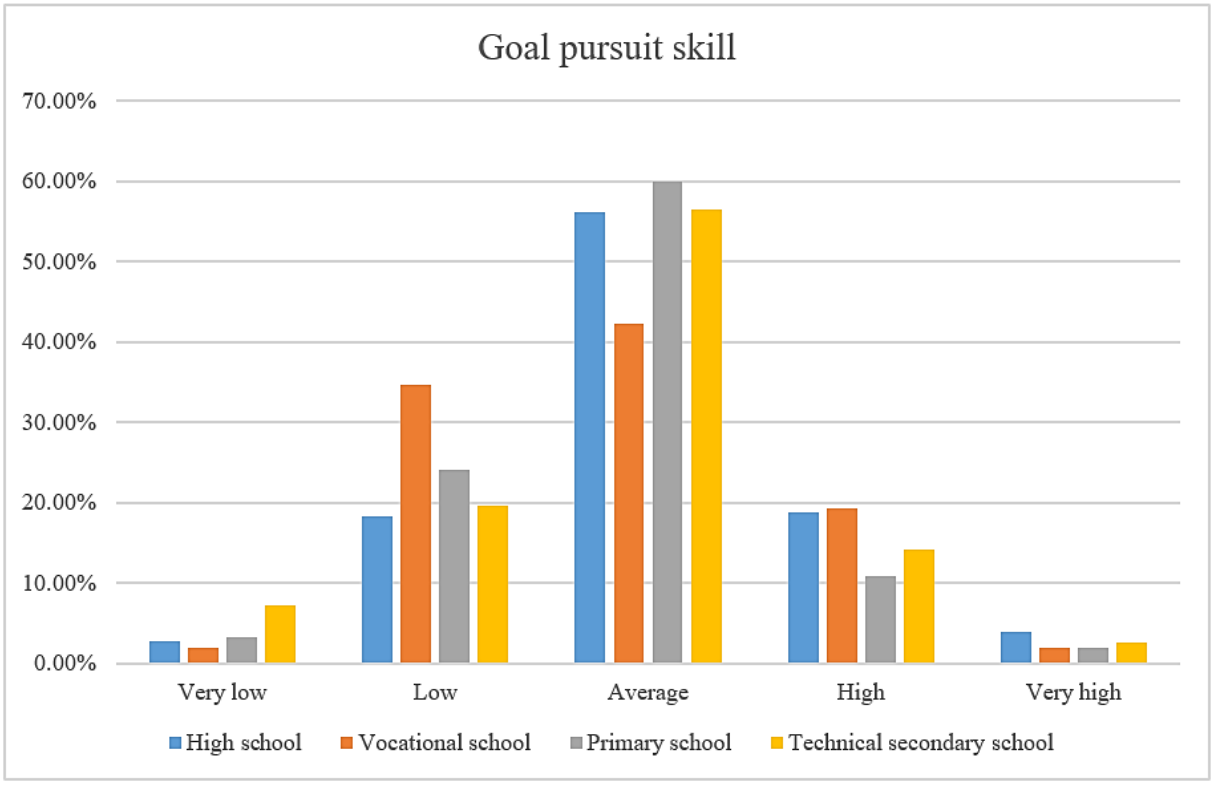

Figure 13. Level of development of the goal pursuit skill in the educational process among school leavers as rated by teachers, broken down by type of school in which the teachers work [%].

Source: own work based on conducted research.

The last part of the survey focused on assessing the level of problem-solving skills that the school graduates had developed throughout the educational process. According to the assessment of the teachers as a whole, the largest number of pupils (55.74%) achieve an average level of these skills. However, one in three teachers (33.31%) believes that pupils have a low or very low level of problem-solving skills (Figure 14).

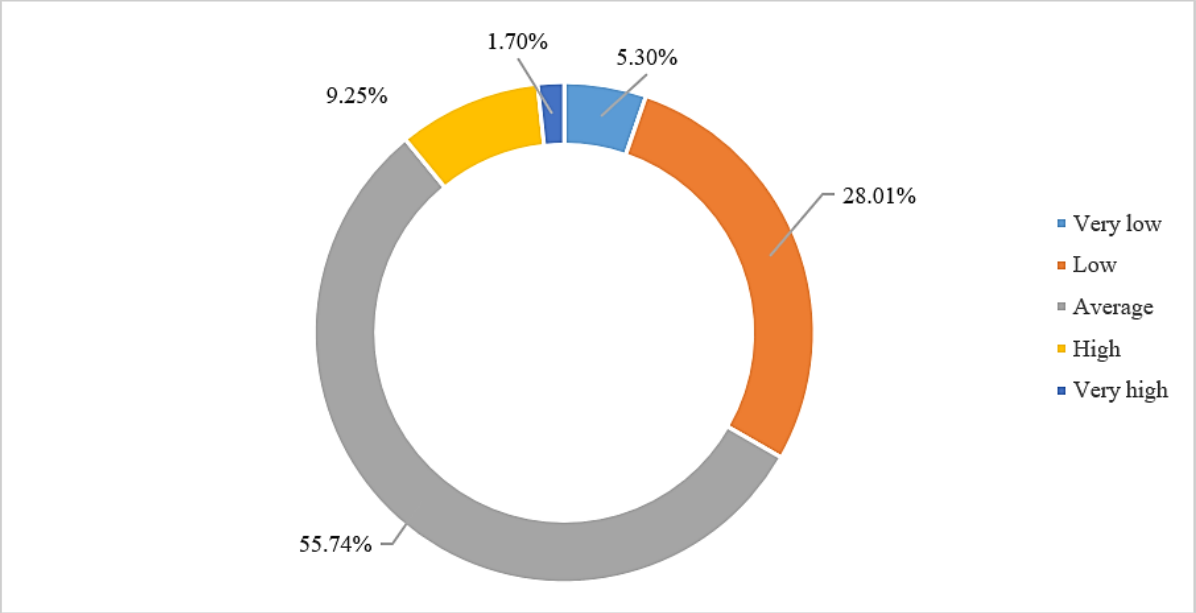

Figure 14. Level of development of the problem-solving skill in the educational process among school leavers as rated by all teachers [%].

Source: own work based on conducted research.

Further in-depth analysis shows that, according to the survey results, acquisition of problem-solving skills by school leavers exhibits comparable levels across all the types of educational institutions. The findings show a similar distribution (Figure 15).

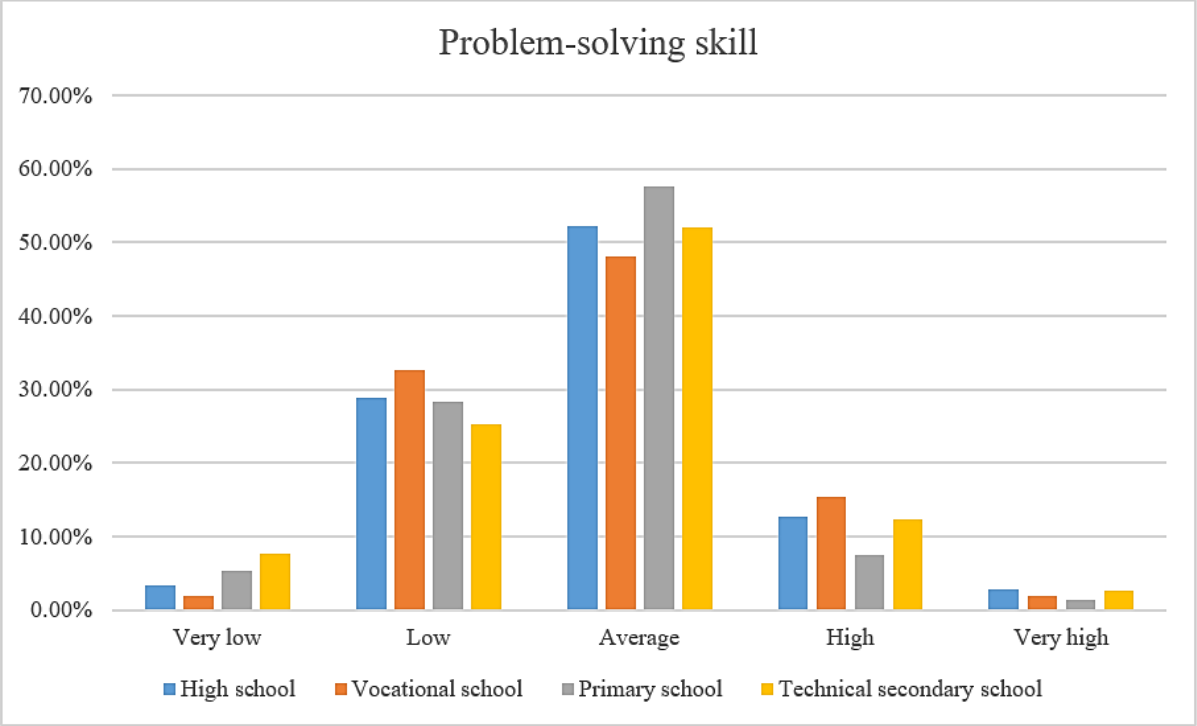

Figure 15. Level of development of the problem-solving skill in the educational process among school leavers as rated by teachers, broken down by type of school in which the teachers work [%].

Source: own work based on conducted research.

5. Summary

The study surveying the assessment of school leavers' skills shows that they are mostly rated as average. Decision-making skills were rated as average by 65.06% of teachers, with high school and technical secondary school pupils more often receiving the highest ratings from teachers. In primary and vocational schools, teachers were more likely to assign low ratings. As far as development of decision-making skills under conditions of uncertainty and risk was concerned, pupils performed worse, with 46.23% of teachers rating the skills at an average level and 36.57% at a low level. The lowest scores were recorded in primary schools and the highest in high schools and vocational schools. As for responsibility for decisions made, 49.01% of teachers considered this skill to be average, one in three teachers (32.77%) believed that the level of this skill developed during education was low, while only one in ten respondents (10.06%) rated it as high or very high. Higher results were reported in high schools and technical secondary schools, where pupils are more likely to score high. Similar conclusions apply to goal-setting – average scores prevail (56.49%), but high schools and vocational schools are more effective in supporting the development of these skills. In terms of problem-solving skills, 55.74% of teachers rated pupils at an average level, but as many as 33.31% of teachers believe that the problem-solving skills of school leavers developed poorly or very poorly during their education.

The research results indicate that, according to teachers, pupils from different types of schools achieve an average level in key skills, such as making decisions, making decisions under conditions of uncertainty and risk, responsibility for one's own decisions, making choices, setting goals, striving to achieve them and problem solving, throughout their educational process. Even though many pupils demonstrate satisfactory performance in these skills, these results suggest that there still is a need for more intensive support and further development of these competencies. Greater commitment to improving pupils' skills is particularly necessary in primary and vocational schools so that learners can achieve a higher level of independence, responsibility and ability to solve problems in everyday life. Further work on developing these competencies in these types of schools is crucial so that young people are better prepared to make informed and responsible decisions in the future, both in their professional and personal lives. These skills are vital in most professions; therefore, it is essential that schools place greater emphasis on developing them from the early stages of education.

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