

# THE PROFESSIONAL EXPERIENCE OF MATHEMATICS TEACHERS IN PROMOTING STUDENTS' TRANSVERSAL SKILLS IN BASIC AND SECONDARY SCHOOLS

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## ABSTRACT

**Aim.** The aim of the study is to explore the professional experience of basic and secondary school mathematics teachers in developing transversal skills.

**Methods.** In total, 126 mathematics teachers and 512 students participated in the study. Students' transversal skills assessed by teachers were compared with the opportunities provided to develop these skills in both basic and secondary schools. Descriptive statistics and Spearman's rank correlations were used. Secondary school students' transversal skill self-assessments were also compared with teacher assessments. The Mann–Whitney U test was conducted.

**Results.** The assessment of basic school students' transversal skills in many areas does not correlate with the assessment of the opportunities provided. At sec-

ondary school, a correlation exists between the assessment of most transversal skills and the evaluation of the opportunities for their development. Additionally, secondary school students rate their skills higher than teachers do in almost all transversal skills; however, this difference is not always statistically significant.

**Conclusions.** The results indicate that although Latvian education policy documents emphasise the development of transversal skills at all levels, in practice this integration often occurs in a fragmented manner, as teachers lack a shared understanding and methodological support for effectively fostering these skills. Teachers believe they provide students with opportunities to develop transversal skills; however, these opportunities do not always translate into actual skill development. Furthermore, the differences between students' self-assessments and teachers' evaluations highlight the need for a more unified understanding of how to foster transversal skills effectively.

**Keywords:** transversal skills, secondary school, basic school, teacher assessment, school mathematics

## INTRODUCTION

In the 21st century, rapid technological development, globalisation, and the constantly changing economic environment promote the inclusion of transversal skills in the learning process as an essential prerequisite for a successful life and professional growth (European Commission, 2019, 2021). This inclusion supports the transition to life after school and ensures a closer alignment between graduates' skills and employers' requirements (Tam & Trzmiel, 2018).

In May 2018, the Council of the European Union adopted a recommendation on key competences for lifelong learning—literacy, multilingualism, numerical, scientific and engineering skills, digital and technology-based competences, interpersonal skills and the ability to learn new competences, active citizenship, entrepreneurship, as well as cultural awareness and expression (European Commission, 2019). These competences are essential for citizens' personal development, sustainable lifestyle, employability, active citizenship, and social inclusion (European Commission, 2019). Within the framework of the Organisation for Economic Co-operation and Development (OECD) *Learning Compass 2030*, it is emphasised that not only traditional cross-curricular skills but also transformative competencies (creating new value, managing dilemmas, acting responsibly) are important in future education (Taguma et al., 2023).

One of the goals of education in Latvia is to ensure students' readiness to respond to future challenges by preparing them for professional life with critical thinking, digital skills, and high emotional intelligence (Latvijas Republikas Pārresoru koordinācijas centrs, 2020). To achieve the objectives set out in the National Development Plan, one possible approach is to enhance transversal skills, beginning in early childhood education and continuing throughout subsequent stages of education. These

skills are a vital component of the learning process, as they enable students to apply knowledge in various contexts, use diverse thinking strategies, and engage in self-directed learning (Skola2030, 2019).

With the expansion of the globalised economy and the growing importance of collaboration in the labour market, the demand for individuals with these universal skills is increasing significantly. This international shift towards recognising the importance of transversal skills marks a fundamental transition from the traditional education paradigm—focused on the acquisition of facts and narrow specialisation—to an educational model based on the holistic development of students (Okada et al., 2024).

To successfully adapt to the changing economic, social, and cultural environment, Latvian education has prioritised STEM learning outcomes. Mathematics, as a core subject, provides the theoretical and practical foundation for mastering all STEM disciplines, ensuring the development of essential skills in data analysis, modeling, and problem-solving (Roberts et al., 2022).

The OECD report *Future-focused Mathematics Curricula (2025)* analyses transversal skills and notes that certain cross-disciplinary competences (e.g., perseverance, resilience, self-reflection) are rarely integrated into mathematics curricula, even though they are essential for problem-solving and critical thinking (OECD, 2025). It is precisely teachers' professional actions, their choice of teaching methods, and the promotion of collaboration that ensure that transversal skills become an integral part of the learning process (Khabeishvili, 2024).

Given the research topic's relevance, the study formulated the following aim: to explore the professional experience of basic and secondary school mathematics teachers in developing transversal skills. Two research questions were set:

- How do basic and secondary school mathematics teachers assess their students' transversal skills?
- How do basic and secondary school mathematics teachers promote their students' transversal skills?

## THEORETICAL BACKGROUND

The implementation of transversal skills in the learning process is being discussed with increasing frequency at the level of European education policy. For example, the international project TRANSVAL-EU, implemented in 2023, focused on the systematic identification, documentation, and assessment of transversal skills (De Greef et al., 2023).

In preparing learners to adapt to trends in the economic and sociocultural environment, Latvia has, since 2018, integrated the transversal skills defined in educational policy documents into the learning process at every level of education, emphasising them as tools for overcoming these challenges (Lāma, 2024). However, a significant gap

exists between the goals set out in educational policy documents and actual pedagogical practice. Although teachers conceptually recognise the importance of transversal skills, their development in lessons is often implemented fragmentarily (Mačianskienė, 2016) and is secondary in relation to the subject's specific learning outcomes.

Research reveals that teachers lack a unified understanding of 21st-century skills, and the strategies they use (project work, discussions, reading strategies, teamwork) are often applied independently of the specific skills they target. This points to a broader challenge: schools lack a clear approach and a shared understanding of the most effective way to teach these skills (Varas et al., 2023). Transversal skills need to be developed across all subjects and age groups (Skola2030, 2019), creating a learning environment where knowledge and skills can be continuously adapted to context. Implementing this requires specialised teacher training and qualifications, as well as didactically grounded methods and technologies. This process must be carried out in an integrated and purposeful manner, rather than as separate efforts by individual teachers or students, which sets new demands for the entire education system (Tsankov, 2017).

Over the past two decades, increased attention has been given to STEM subjects in primary, lower secondary, and upper secondary education (Hurley et al., 2024). Some transversal skills incorporate competencies characteristic of STEM and mathematics, such as problem-solving, innovative thinking, self-regulation, and reflection; however, skills like entrepreneurship or active citizenship are not inherently included. Meanwhile, transversal skills such as creativity and collaboration are integrated into mathematics less frequently than into language subjects. For instance, empathy and teamwork are more often emphasised in subjects that are better suited to group and collaborative activities, such as the arts or language learning. Consequently, mathematics curricula are more focused on individual analytical skills, highlighting potential areas for further development in promoting holistic education (OECD, 2025).

To integrate transversal skills into the mathematics learning process, it is necessary to employ student-centered teaching methods, strategies, and educational tools. Creating such a learning environment enhances students' engagement, participation, and motivation (Khabeishvili, 2024).

To promote the acquisition of transversal skills in mathematics, methods that integrate these skills without reducing the depth or quality of traditional mathematics education while increasing the subject's interdisciplinary nature are recommended. For example, data literacy can be incorporated into traditional topics such as probability theory and descriptive statistics, rather than being taught as a separate part of the mathematics curriculum. Emphasis should be placed on aligning learning topics with transversal skills to ensure that the curriculum provides logical progression between grade levels (vertical alignment) and coherence within a single grade (horizontal alignment) (OECD, 2025).

To foster transversal skills in mathematics, teachers should not merely introduce students to these skills but actively apply them by finding ways to implement them within the curriculum (Taguma et al., 2023), ensuring continuity across different educational levels (Connolly, 2021). Previous research has analysed the acquisition of transversal skills in mathematics curricula in relation to students' personal traits. For example, perseverance—a crucial trait for problem-solving and overcoming challenges—is rarely incorporated into mathematics curricula, even though it helps students tackle complex problems and supports resilience in learning (OECD, 2025).

The development of transversal skills requires new pedagogical approaches that go beyond traditional subject boundaries and emphasise interdisciplinary learning experiences (Tilea, 2015). It is recommended to engage students in relatively large projects that address real-world problems or challenges. These projects should be balanced to include both curriculum content and transversal skills such as collaboration and critical thinking (Rehman et al., 2024). In basic education, it is advisable to use the 5E instructional model (Engage, Explore, Explain, Elaborate, Evaluate) and incorporate elements of group work. This approach helps students learn actively and develop transversal skills (Bakan & Bircan, 2025).

To promote transversal skills in mathematics, computational skills are prioritised as a core competency, enabling students to apply mathematical knowledge in dynamic and unfamiliar situations. In this process, the teacher plays a crucial role by helping students connect mathematical skills to real-life contexts, develop an understanding of the practical applications of mathematics, build confidence in their abilities, and learn how to learn (Cepic et al., 2015). By employing various teaching methods and techniques, the teacher fosters students' critical thinking, self-directed learning, and creative approaches to problem-solving.

Thus, a teacher's professional competence and pedagogical expertise are the key prerequisites for computational skills to become not only a technical ability but also a foundation for the development of transversal skills in mathematics (Wilson et al., 2025).

## RESEARCH METHODOLOGY

A transversal skills questionnaire was created and distributed among Latvian basic and secondary school teachers to measure their perceptions of their students' transversal skills in mathematics and assess the extent to which teachers create situations that promote these skills. The questionnaire was developed based on the transversal skills frameworks of basic and secondary school mathematics curricula (Appendix).

Teachers assessed six of their students' transversal skills: critical thinking and problem-solving, creativity and entrepreneurship, self-directed learning, collaboration, civic participation, and digital skills. Each skill was measured with a single statement

on a five-point Likert scale (1 = very poor, 5 = very good). To evaluate the extent to which teachers create situations that promote these transversal skills, two separate questionnaires were developed, both of which were aligned with the mathematics curriculum—one for teachers in basic education (Grades 7–9) and another for teachers in secondary education (Grades 10–12). These questionnaires assessed the same six transversal skills using the same five-point Likert scale. For both scales, Cronbach's alpha values are all greater than .700; therefore, the scales' internal consistencies should be considered as good (Taber, 2018) (Table 1).

**Table 1**  
*Structure of Transversal Skills Questionnaire*

<b>Transversal skill</b>	<b>Content of the transversal skill</b>	<b>Basic education (<math>\alpha</math>)</b>	<b>Secondary education (<math>\alpha</math>)</b>
Critical thinking and problem-solving	Critically analyses information and contexts, asks precise questions, identifies and defines complex problems, gathers and evaluates reliable information, detects logical errors, and develops flexible, well-reasoned solutions to achieve goals.	.860	.836
Creativity and entrepreneurship	Shows openness to new experiences and challenges, identifies opportunities for improvement, generates and develops ideas, organises resources effectively, and takes initiative to turn ideas into practical solutions individually and in groups.	.703	.764
Self-directed learning	Understands personal needs and goals, manages emotions and behaviour, plans and evaluates actions, uses effective thinking strategies, and reflects on experiences to improve future performance and decision-making.	.778	.859
Collaboration	Communicates respectfully, adapts behaviour to different situations, collaborates with diverse people, manages conflicts constructively, and works toward shared goals while respecting both group and personal interests.	.778	.892
Civic participation	Understands connections between society, environment, and global processes, participates responsibly in improving them, makes value-based decisions, resists peer pressure, and takes responsibility for the consequences of their actions.	.810	.741

Transversal skill	Content of the transversal skill	Basic education ( $\alpha$ )	Secondary education ( $\alpha$ )
Digital skills	Uses digital technologies effectively and responsibly to learn, create, and communicate; critically evaluates media and information reliability; understands the impact of technology; and follows ethical, safe, and legal practices online.	.765	.717

*Source.* Own research.

The following steps were taken to involve participants in the research:

- A list containing all Latvian secondary school names and official email addresses was acquired from the Ministry of Education.
- An email was sent from the researcher's official university email address to all Latvian basic and secondary schools with a proposal to participate in the study. A week later, a reminder email was sent. The email contained instructions on how to organise a survey and a link to the questionnaire.
- Additionally, a link was distributed to all members of the Latvian Association of Mathematics Teachers.

The questionnaire was distributed using QuestionPro and was available from April 23, 2025, until May 23, 2025. In total, 126 mathematics teachers participated in the study (Table 2).

**Table 2**

*Description of Research Sample*

Education level	N	%
Basic education	88	70%
Secondary education (optimal level)	19	15%
Secondary education (highest level)	4	3%
Secondary education (optimal level and highest level)	15	12%

*Source.* Own research.

Additionally, to compare teachers' perceptions of students' transversal skills with students' self-perceptions, secondary data from the previous stage of the study in 2024 was used for an analysis involving 512 secondary school students (Kaļķe et al., 2025).

Descriptive statistics were applied to identify specific trends in students' transversal skills (Cooksey, 2020). Cronbach's alpha values were calculated to assess the reliability of the Likert scale (Taber, 2018). Based on the results of the Kolmogorov–Smirnov test, non-parametric data analysis methods were chosen. Spearman's rank correla-

tion was determined to examine whether there is a relationship between teachers' perceptions of students' transversal skills and teachers' perceptions of creating opportunities for students to develop these skills (Rebekić et al., 2015). A Mann–Whitney U test was performed to determine whether there are differences between students' transversal skill self-assessments and teachers' assessments (Nachar, 2008).

Data analysis was conducted using SPSS version 29 and JASP version 18. Approval for conducting this research was obtained from the Research Ethics Committee of Social Sciences and Humanities of the University of Latvia (09.04.2025. Nr. 13-28/83).

## RESEARCH RESULTS

The analysis of transversal skills among basic education students in mathematics indicates that the assessments of these skills vary significantly (Table 3).

**Table 3**

*Assessments of Transversal Skills and Development Opportunities in Basic Education (N = 88)*

Transversal skill	Students' skills in teachers' assessment			The teacher creates opportunities for the student to improve the skill			rs	p
	M	Mdn	SD	M	Mdn	SD		
Critical thinking and problem-solving	2.94	3	0.68	3.60	3.75	1.06	.070	.517
Creativity and entrepreneurship	2.72	3	0.89	3.67	3.67	1.01	.095	.378
Self-directed learning	2.75	3	1.00	3.75	3.75	1.05	.068	.530
Collaboration	3.58	4	1.03	3.99	4.00	1.09	.128	.234
Civic participation	3.36	3	1.03	3.66	3.67	1.10	.341	.001
Digital skills	3.97	4	1.73	3.81	4.00	1.06	.222	.057

*Source.* Own research.

Teachers assessed digital skills ( $M = 3.97$ ,  $SD = 1.73$ ), collaboration ( $M = 3.58$ ,  $SD = 1.03$ ), and civic participation ( $M = 3.36$ ,  $SD = 1.03$ ) as the most developed transversal skills among primary school students. However, there is notable variation in teachers' assessments of students' digital skills, as indicated by a high standard deviation value ( $SD = 1.73$ ). Self-directed learning ( $M = 2.75$ ,  $SD = 1.00$ ) and creativity and entrepreneurship ( $M = 2.72$ ,  $SD = 0.89$ ) were rated as the least developed skills among basic school students.

In contrast, teachers' assessments of the opportunities they created for students to develop these skills were more consistent. The same three skills that teachers rated as most developed were also those for which they believed students were given the most opportunities to improve. However, the differences between the average ratings of opportunities to develop different transversal skills were small, indicating that teachers offer students similar opportunities for the development of all transversal skills.

To evaluate whether there is a relationship between students' skill levels and the opportunities created to improve those skills, a Spearman's rank correlation test was conducted. For five of the six transversal skills, the correlation between students' skill levels and the opportunities to develop them was not statistically significant. The exception was civic participation ( $r_s = .341$ ), for which a statistically significant moderate correlation was found between the skill assessments and assessments of opportunities to improve it. Further research is needed to better understand why such a correlation does not exist for the other five transversal skills.

An analysis of secondary school students' transversal skills in secondary school mathematics as assessed by teachers shows that they are rated very similarly to those in the basic education stage (Table 4).

**Table 4**

*Assessments of Transversal Skills and Development Opportunities in Secondary Education (N = 38)*

Transversal skill	Students' skills in teachers' assessment			The teacher creates opportunities for the student to improve the skill			rs	p
	M	Mdn	SD	M	Mdn	SD		
Critical thinking and problem-solving	3.16	3	0.68	3.53	3.50	0.59	.162	.332
Creativity and entrepreneurship	2.89	3	0.76	3.40	3.17	0.68	.603	< .001
Self-directed learning	3.16	3	0.82	3.54	3.60	0.59	.376	.020
Collaboration	3.87	4	0.58	3.54	3.67	0.73	.383	.018
Civic participation	3.34	3	0.63	3.47	3.50	0.55	.379	.019
Digital skills	3.97	4	1.58	3.56	3.63	0.54	.309	.085

*Source.* Own research.

Digital skills ( $M = 3.97$ ,  $SD = 1.58$ ), collaboration ( $M = 3.87$ ,  $SD = 0.58$ ), and civic participation ( $M = 3.34$ ,  $SD = 0.63$ ) were rated the highest. As with basic school students, there is a high variation in teachers' opinions regarding secondary school students'

digital skills, as indicated by a high standard deviation ( $SD = 1.58$ ). Teachers rated students' creativity and entrepreneurship skills ( $M = 2.89$ ,  $SD = 0.76$ ) in mathematics the lowest. An analysis of teachers' assessments of the opportunities created for secondary school students to improve these skills shows that the ratings are very similar, and the difference between the highest- and lowest-rated transversal skill is even smaller than in the basic education stage.

To evaluate whether there is a relationship between secondary school students' skill levels and the opportunities created to improve those skills within the mathematics subject, a Spearman's rank correlation test was conducted. The results indicate that a statistically significant correlation exists for four of the six skills. A strong correlation was found between assessments of students' creativity and entrepreneurship and the opportunities to develop this skill ( $r_s = .603$ ). Moderate correlations were identified for self-directed learning ( $r_s = .376$ ), collaboration ( $r_s = .383$ ), and civic participation ( $r_s = .379$ ). These findings suggest that the relationship between the opportunities created by teachers and students' skill levels is considerably stronger at the secondary education level compared to the basic education level.

To compare teachers' assessments of secondary school students' skills in mathematics with students' self-assessments, data from the first phase of the study were used. The results indicate that, for most transversal skills, students gave themselves higher ratings compared to teachers (Table 5).

**Table 5**

*Secondary School Students' Transversal Skills in Mathematics: Comparison of Students' and Teachers' Assessments*

Transversal skill	Teachers' assessment (N = 38)			Students' self-assessment (N = 512)			U	p
	M	Mdn	SD	M	Mdn	SD		
Critical thinking and problem-solving	3.16	3	0.68	3.56	3.67	0.77	10254	.016
Creativity and entrepreneurship	2.89	3	0.76	3.40	3.50	0.84	6591	< .001
Self-directed learning	3.16	3	0.82	3.12	3.00	0.91	5999	< .001
Collaboration	3.87	4	0.58	3.64	3.67	0.83	9892	.861
Civic participation	3.34	3	0.63	3.22	3.00	0.93	11282	.097
Digital skills	3.97	4	1.58	3.61	3.67	0.82	10442	.443

*Source.* Own research.

Statistically significant differences between teachers' and students' assessments were found only for critical thinking and problem-solving ( $p = .016$ ), creativity and entrepreneurship ( $p < .001$ ), and self-directed learning ( $p < .001$ ). Further research is needed to explore the reasons behind the differences between teachers' and students' assessments in more detail.

## DISCUSSION

The research results indicate that teachers rate the development opportunities for transversal skills higher than students' current skill level. In all transversal skills, teachers believe they create more opportunities for developing these skills than students actually demonstrate, except for civic participation. This suggests the need for further research, particularly to identify the teaching methods and techniques used in implementing transversal skills.

Students' digital skills were rated the highest; however, the assessment of development opportunities was slightly lower, and the correlation was not statistically significant. It is possible that students acquire digital skills outside of school or independently, and that teachers do not feel sufficiently competent in digital literacy. Similarly, Katerina Tzafilkou et al. (2023) found that teachers' assessments across all sub-competences of digital skills can be considered average. Demissie et al. (2022) also point out that teachers should integrate digital tools more effectively into their teaching. Therefore, increased attention should be paid to improving teachers' digital skills, especially to the enhancement of methodology, at the basic and secondary education levels.

A stronger correlation between students' transversal skill levels and the opportunities created by teachers to develop them in basic school is observed only in the area of civic participation. In secondary school, however, the correlations between transversal skills are more pronounced in creativity and entrepreneurship, self-directed learning, collaboration, and civic participation. This may be explained by the fact that in basic school, transversal skills are more often perceived as individual student traits rather than as intended learning outcomes. Teachers tend to delegate responsibility for implementing these transversal skills to the next stage (i.e., secondary education). It is therefore recommended that future research assess whether the implementation of transversal skills included in the national curriculum differs across educational levels.

Based on the evaluations of transversal skills and the opportunities created by teachers in secondary education, it can be concluded that at this educational level, the gap between skills and opportunities is smaller. This may indicate that students are better able to make use of the learning situations offered. Although critical thinking is rated similarly to other transversal skills, there is no statistically significant evidence that the opportunities provided by teachers strengthen it. This finding warrants more in-depth investigation in future research.

Based on a comparative analysis of secondary school students' self-assessments of transversal skills and teachers' evaluations, it was found that students gave themselves higher ratings than teachers did in several skills (for example, critical thinking and problem-solving, creativity and entrepreneurship, and self-directed learning). This indicates a perception gap between the two groups. A similar trend, according to which students rate their transversal skills higher than teachers do, has previously been observed (Lāma, 2023). Future research should address whether students over-

estimate their skills, whether teachers fail to evaluate them objectively, and whether there is a shared understanding of the expected learning outcomes for transversal skills.

## CONCLUSIONS

The present exploration of the professional experience of basic and secondary school mathematics teachers in developing students' transversal skills allows the following conclusions to be drawn:

- The need expressed in European and Latvian education policy documents to integrate transversal skills at all levels of education demonstrates a shift from the traditional learning paradigm to a competence-based approach. However, in practice, this integration often occurs in a fragmented manner, as teachers lack a shared understanding and methodological support for effectively fostering transversal skills;
- The development of transversal skills in mathematics at the basic and secondary school levels is supported. However, it tends to occur in a fragmented and secondary manner in relation to the “classical” subject content and learning outcomes of mathematics. Moreover, this development is not consistent—teachers tend to promote digital and collaboration skills more actively, while creativity, entrepreneurship, and self-directed learning receive less attention;
- The opportunities created by teachers for the development of transversal skills often exceed the level of students' transversal competencies. This indicates a need to align teaching methods and approaches with the requirements of the basic and secondary education standards and employ instructional strategies that specifically promote the enhancement of transversal skills;
- Vertical (between grade levels) and horizontal (between topics and subjects) alignment is insufficient. Where alignment is strong, most notably at the secondary school level, the connection between the opportunities created and students' skills is also stronger. This confirms the need to plan the sequential and integrated development of transversal skills, starting from basic education;
- A comparison of teachers' assessments and students' self-assessments at the secondary school reveals significant differences in several transversal skills. On average, students give themselves higher ratings in critical thinking and problem-solving, creativity, and entrepreneurship than teachers do, and these differences are statistically significant;
- In contrast, there are no statistically significant differences in the assessment of collaboration, self-directed learning, civic engagement, and digital skills at the secondary level. This indicates a more unified understanding between teachers and students regarding the expected outcomes of these transversal skills;
- For transversal skills in mathematics to become an integral part of the learning process, teachers need to implement a student-centered, interdisciplinary, and research-based approach, thereby promoting the acquisition of 21st-century transversal skills at all levels of education.

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## APPENDIX

**Table A1***Transversal Skills Questionnaire*

<b>Basic education</b>	<b>Secondary education</b>
Critical thinking and problem-solving	
<p>1.1. Explores, analyses, and evaluates different types of information and situations;</p> <p>1.2. Understands the context of information/situations;</p> <p>1.3. Makes well-considered and responsible decisions;</p> <p>1.4. Defines problems and solves them.</p>	<p>1.1. Purposefully formulates precise questions to critically analyse complex situations and abstract ideas. Explores the context, analyses it, critically evaluates it, and synthesises and interprets information to achieve a specific goal. Gathers comprehensive, accurate information on complex issues, assesses its reliability, and analyses why obtaining reliable information can be difficult in certain situations.</p> <p>1.2. In complex situations, reasons from the specific to the general and from the general to the specific. Notices logical errors in arguments in their own and others' statements and corrects them. Argues by demonstrating the credibility of a statement and forming well-founded conclusions.</p> <p>1.3. Identifies current needs, accurately formulates a complex problem, and justifies the necessity of solving it. Sets a goal, proposes multiple solutions, evaluates them against the goal, and selects the best one to implement.</p> <p>1.4. Independently develops and implements a problem-solving plan in complex, unclear situations, choosing, using, and adapting appropriate problem-solving strategies. Reacts flexibly to unforeseen changes, evaluates the work done and the conclusions drawn, and applies them in other contexts.</p>
Creativity and entrepreneurship	
<p>2.1. Is open to new experiences and challenges;</p> <p>2.2. Seeks and identifies diverse opportunities to improve the current situation;</p> <p>2.3. Takes the initiative when performing tasks both in groups and individually.</p>	<p>2.1. Is interested in discoveries and innovations, proactively seeks new opportunities to effectively improve their own and others' quality of life, encourages improvement of existing situations, accepts unprecedented, complex challenges, and maintains emotional balance and openness in conditions of uncertainty.</p> <p>2.2. Observes situations from multiple perspectives, notices new opportunities, and purposefully and flexibly applies or develops their own idea-generation strategies to arrive at new and useful solutions. Efficiently organises resources (people, knowledge, capital, infrastructure) to implement their plans. Independently seeks, evaluates, and responsibly uses others' ideas while also offering their own to inspire others.</p> <p>2.3. Develops ideas into sustainable proposals both independently and in groups, using mistakes and difficulties as opportunities for growth.</p>

Basiceducation	Secondaryeducation
<p>Self-directedlearning</p> <p>3.1. Is aware of their own desires, needs, and interests;</p> <p>3.2. Manages their emotions, thoughts, and behaviour;</p> <p>3.3. Sets goals, plans their actions, implements the plan, and evaluates the outcomes;</p> <p>3.4. Purposefully uses thinking strategies appropriate to the situation and monitors their own learning progress.</p>	<p>3.1. Sets short-term and long-term goals regularly and according to their needs, formulates criteria to evaluate whether a goal has been achieved, plans the steps to achieve the goal, and takes responsibility for their role in carrying out the steps and achieving the goals.</p> <p>3.2. Independently and regularly analyses and reflects on the connection between their actions, emotions, personal traits, and behavior. Finds ways to develop the ability to manage their thinking, emotions, and behaviour.</p> <p>3.3. Independently selects, adapts, and creates their own thinking strategies in complex situations.</p> <p>3.4. When making responsible decisions, manages emotions in a socially acceptable way and focuses on opportunities, benefits, and positive solutions.</p> <p>3.5. Independently uses criteria that help monitor and improve work; evaluates, summarises, and purposefully applies the gained experience in future work processes.</p>
<p>Collaboration</p> <p>4.1. Respectfully expresses their own opinions and listens to the opinions of others;</p> <p>4.2. Adapts their behaviour and communication style according to the situation;</p> <p>4.3. Collaborates with different people to achieve specific goals and reaches solutions acceptable to all parties involved.</p>	<p>4.1. Plans and carries out respectful verbal, non-verbal, and digital communication that is important for achieving personal and group goals.</p> <p>4.2. Participates in both homogeneous and heterogeneous group work, accepts differences in opinions, acknowledges participants' diverse experiences and abilities, and anticipates, prevents, and resolves disagreements and conflicts, including in digital environments.</p> <p>4.3. In learning processes and public life, consciously focuses on the common good and the achievement of goals important to the group. Can represent their own interests while respecting those of others when group and personal needs differ.</p>

<b>Basiceducation</b>	<b>Secondaryeducation</b>
Civic participation	
<p>5.1. Recognises interconnections in society and the environment;</p> <p>5.2. Analyses their involvement in the local community and global processes and participates in improving them;</p> <p>5.3. Takes responsibility for their actions.</p>	<p>5.1. Explains and justifies their perspective on interconnections at both local and global levels. Evaluates the interactions between individuals, society, and the environment.</p> <p>5.2. Based on their own values and while respecting those of others, thoughtfully chooses activities and everyday situations in which to participate and involve others, respectfully justifying their stance. Can refuse participation if an activity does not align with their values and resists peer pressure while remaining connected with those they disagree with.</p> <p>5.3. Explains the consequences of their actions and takes responsibility for them in everyday situations as well as in local and global processes.</p> <p>5.4. Independently and collaboratively gains experience by engaging in finding and implementing solutions that help improve quality of life.</p>
Digital skills	
<p>6.1. Uses digital technologies responsibly and effectively to acquire knowledge, create new content, share content, and communicate;</p> <p>6.2. Critically and constructively evaluates the role of technology and media in society.</p>	<p>6.1. Purposefully selects or adapts and effectively uses appropriate digital technologies to implement diverse ideas.</p> <p>6.2. Analyses the benefits and risks of digital communication, behaves responsibly, and communicates in the digital environment in ways that respect their own and others' interests.</p> <p>6.3. Critically analyses the reality created by media and the reliability of information, takes responsibility to prevent the impact of low-quality media content, and, when creating their own media content, observes privacy, ethical, and legal requirements.</p> <p>6.4. Analyses and evaluates the role of technology in different contexts, assesses healthy and safe technology use habits, applies and adapts them to their needs, and reflects on their digital identity and its alignment with personal and societal interests.</p>

*Source.* Own research.