

DIFFERENCES IN MOTIVATIONAL SELF-REGULATION STRATEGIES ACROSS HIGH-ABILITY, LEARNING DISABILITIES AND REGULAR STUDENTS

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Abstract

Motivational self-regulation strategies (MRSs) play a key role in how students initiate, sustain, and direct effort during learning. Although findings vary across specific strategies, motivational self-regulation is broadly related to students' engagement and academic performance. This study investigates differences in the use of MRSs among 183 Spanish secondary students, comprising regular students, students with learning disabilities, and high-ability students. Group differences were analysed using the Kruskal–Wallis test. The analyses revealed significant group differences in three MRSs. High-ability students reported higher self-enhancing self-talk, suggesting greater use of motivational thoughts oriented toward demonstration of self-worth in terms of normative standards. Students with learning disabilities showed significantly higher work-avoidance self-talk, indicating stronger tendencies to focus on eluding effort. They also scored lower than both comparison groups in enhancement of personal significance, reflecting difficulties in connecting the task with one's own personal interests and preferences. Overall, these findings highlight distinct motivational regulation profiles and underscore the need for differentiated motivational support, particularly for students with learning disabilities.

Keywords: *Adolescence, motivational self-regulation strategies, high ability, learning disabilities, regular students.*

1. Introduction

Interest in the extent to which differences in self-regulated learning moderates both motivation and performance of students with varying learning potential is based on two fundamental aims: to improve our understanding of the mechanisms underlying the acquisition and deployment of learning skills and to lay the foundations for the design of effective inclusive training programs for these skills (Baccassino & Pinnelli, 2023; Peña-San José et al., 2026). In this regard, the contrast between how regular students (RS) use learning strategies and how high-ability students (HAS) or those with learning disabilities (SWLD) use them has attracted the attention of researchers (Kranjec y Bakračević, 2023; Aydan & Mamas, 2025). Overall, the available data indicate that HAS demonstrated greater metacognitive awareness and declarative knowledge about learning strategies than RS. The findings regarding the use of learning strategies point in the same direction, although they are less consistent, varying depending on age group, context, and type of learning strategy (Stoeger & Sontag, 2012). In fact, further research is clearly needed, particularly with regard to MRSs which remain unexplored. To our knowledge, only one study has examined motivational self-regulation in HAS, showing that they report greater use of self-consequating than RS (Zimmerman & Martinez-Pons, 1990). Regarding learning disabilities, empirical data show that SWLD report lower levels of self-regulation strategies than RS (Aydan & Mamas, 2025). However, although SWLD are often characterized by motivation problems, their use of MRSs in comparison with RS has barely been explored.

Given the gaps identified in research on the differential use of MRSs as a function of learning potential, the following research questions were formulated for the present study: (1) Do HAS differ from their peers in their use of MRSs? (2) Do SWLD differ from their peers in their use of MRSs?

2. Methods

2.1. Participants

A total of 183 Spanish secondary students (36% female), aged 12 to 16 years, participated in the study. The sample comprised RS (36.6%), SWLD (32.2%), and HAS (31.2%). Students with learning disabilities were identified based on self-reported reception of educational support at their schools due to specific education needs. High-ability students were recruited through an extracurricular enrichment program for adolescents with high mathematical talent.

2.2. Measures

Students' use of MRSs was measured by ten subscales of the Spanish version of the Motivational Regulation Survey (Rojas-Ospina & Valencia-Serrano, 2019; Wolters & Benzon, 2013) and the Escalas de Estrategias Motivacionales del Aprendizaje-Versión Secundaria (Suárez-Riveiro & Fernández-Suárez, 2011). In the present study, internal consistency for subscales was calculated using the Cronbach's alpha, and the values ranged between 0.74 and 0.90.

2.3. Procedure

Data were collected during the second trimester of the 2022/2023 academic year, following approval from the Bioethics Committee of the University of Santiago de Compostela (protocol code: 29/2020). Written informed consent was obtained from all students and their families prior to participation. Questionnaires were administered collectively in the classroom, and participation was voluntary, anonymous, and uncompensated.

3. Results

Group differences in MRSs were examined using the Kruskal–Wallis test, with post hoc pairwise comparisons. Effect size was estimated using epsilon squared (ϵ^2). Results are presented in Table 1.

Table 1. Descriptive Statistics by Group, Kruskal–Wallis Test Results and Significant Post-hoc Comparisons.

	SWLD <i>M (SD)</i>	RS <i>M (SD)</i>	HAS <i>M (SD)</i>	<i>H(2)</i>	ϵ^2	Group Comparison
MST	3.26 (1.13)	3.44 (1.16)	3.65 (0.97)	3.639	.009	
PreST	4.58 (1.01)	4.70 (1.19)	4.88 (0.93)	2.972	.005	
SenST	3.24 (1.40)	3.19 (1.38)	3.82 (1.21)	9.625**	.042	HAS > RS*, HAS > SWLD*
SdeST	3.92 (1.46)	3.53 (1.56)	3.82 (1.54)	2.082	.000	
WavST	3.33 (1.32)	2.88 (1.38)	2.59 (1.34)	9.199**	.040	SWLD > HAS**
SEE	3.29 (1.36)	3.53 (1.58)	3.91 (1.18)	5.625	.020	
EPI	3.57 (1.11)	4.02 (1.34)	4.13 (1.14)	8.194*	.034	HAS > SWLD*, RS > SWLD*
ESI	3.32 (1.24)	3.37 (1.26)	3.76 (1.42)	0.691	.000	
SC	4.21 (1.21)	4.16 (1.34)	3.50 (1.11)	3.482	.008	
CA	3.60 (1.45)	3.57 (1.46)	3.69 (1.20)	0.060	.000	

Note. MST = mastery self-talk, PreST = personally referred self-talk, SenST = self-enhancement self-talk, SdeST = self-defeating self-talk, WavST = work-avoidance self-talk, SEE = self-efficacy enhancement, EPI= enhancement of personal significance, ESI = enhancement of situational interest, SC = self-consequating, CA = cost appraisal, RS= Regular students, SWLD= Students with learning disabilities, HAS= High-ability students. * $p < .05$, ** $p < .01$.

4. Discussion

The aim of the study was to explore possible differences in the use of motivational self-regulation strategies among students with varying learning potential (students with learning disabilities and high-ability and regular students). Our results indicate that high-ability secondary school students use self-enhancing to a greater extent than students in the other two groups, while students with learning disabilities tend to rely significantly less on the enhancement of personal significance. Both strategies contribute to highlighting or emphasizing the value of the task at hand, although they address different facets of task value: self-enhancing would be more in line with *utility value* (usefulness of a task for achieving future goals or external rewards) while enhancement of personal significance would attend to *attainment value* (alignment with sense of identity) (Miele & Scholer, 2016). The first motivational strategy mentioned is considered as more externally referred than the second, which is thought to be representative of internalized regulation (Reeve et al., 2008). According to Wolters and Benzon (2013), these preferences could be explained by either greater declarative or procedural knowledge about the prioritized strategies or the belief that they are more efficient. Pending further data on the manifestation of learning motivational strategies in students with different learning potential, we can tentatively propose that students are probably responding to high levels of challenge and competitive pressure characteristic

of secondary education (Yeo et al., 2009). It is likely that high-ability students, who are used to outperforming their peers, simply find it easier and more efficient to motivate themselves by thinking about this advantage. For their part, students with learning disabilities tend probably to focus on protecting their ego and therefore tend to neglect the enhancement of personal significance. These interpretations would also be in accordance with our results about the strategy of work-avoidance self-talk, which has been found to be significantly more used by students with learning disabilities than high-ability students. It can be expected that students with learning disabilities will find it particularly difficult to appreciate the functionality of the tasks assigned in the educational system.

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THE INTERPLAY OF TEACHERS' SOFT SKILLS: CREATIVE AND INTERCULTURAL EXPRESSION, CRITICAL THINKING AND EMOTIONAL INTELLIGENCE

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Abstract

Teachers' soft skills are increasingly recognized as key determinants of effective teaching and high-quality educational practice. Creativity, intercultural competence, critical thinking, and emotional intelligence enable teachers to respond to evolving educational contexts, foster inclusion, and build meaningful relationships. However, these competencies are typically examined as discrete constructs, limiting understanding of their interaction and highlighting the need for an integrated, system-oriented perspective. This study is based on a sample of 1800 secondary school teachers in Lithuania. The findings reveal consistent positive relationships among all examined competencies. Emotional intelligence emerges as a central component, strongly associated with both creative expression and critical thinking, while intercultural expression relates to engagement with diverse perspectives. By demonstrating the systemic interdependence of key competencies, the study challenges fragmented approaches to teachers' soft skills and supports a shift toward integrative models of professional competence, in line with the P21 Framework and the OECD Learning Compass 2030.

Keywords: *Teachers' soft skills, creative and intercultural expression, critical thinking, emotional intelligence.*

1. Introduction

Contemporary education is characterized by increasing complexity, uncertainty, and diversity, placing new demands on teachers' professional competence. Competencies such as creativity, intercultural competence, critical thinking, and emotional intelligence are widely recognized as essential for navigating diverse classrooms and fostering inclusive environments. However, they are predominantly conceptualized and measured as distinct constructs, which risks oversimplifying the interactive nature of teaching practice. This fragmentation is also reflected in influential policy frameworks, including the P21 Framework and the OECD Learning Compass 2030, which emphasize multiple competencies but provide limited insight into interaction. Consequently, the systemic nature of teachers' soft skills remains insufficiently examined. This study aims to investigate relationships among key competencies and explore their functioning as an integrated system within teachers' professional practice.

2. Theoretical framework

Contemporary education, shaped by globalization, cultural diversity, and rapid social change, requires teachers to mobilize integrated systems of professional competence rather than isolated skills (OECD, 2022; UNESCO, 2024). Within this context, creativity, intercultural competence, critical thinking, and emotional intelligence are increasingly conceptualized as interdependent dimensions of teachers' soft skills (Barrett, 2018). However, despite this recognition, empirical research has predominantly examined these competencies separately, leaving interrelationships insufficiently explored.

Creativity is conceptualized as a socially embedded and generative process of meaning-making emerging through interaction with cultural and contextual environments (Amabile & Pratt, 2016; Beghetto, 2023). In educational practice, it enables teachers to reinterpret perspectives and construct inclusive learning experiences. In this regard, creativity is closely intertwined with intercultural competence, as both involve engagement with diverse perspectives through openness, dialogue, and reflexive understanding (Barrett, 2018; OECD, 2022). These competencies underpin participation in multicultural societies and support cultural awareness in lifelong learning (OECD, 2022). *Critical thinking* operates as a key mediating cognitive dimension, enabling teachers to question assumptions, systematically evaluate knowledge, and

make informed decisions in complex and uncertain contexts (Facione, 1990). It further supports reflective self-development processes understood as continuous and dynamic meaning-making across personal, epistemological, and social dimensions. *Emotional intelligence* functions as an integrative mechanism connecting cognitive, social, and affective domains of teacher competence. It is conceptualized as the ability to perceive, understand, and regulate emotions, as well as to use emotional information to guide thinking and behavior (Mayer et al., 2016). Research highlights its central role in teachers' professional functioning, well-being, and relationships in educational settings (Dolev & Leshem, 2017; Frenzel et al., 2021), as well as its contribution to the development of reflective and adaptive professional identity (Lozano-Peña et al., 2021). From this perspective, teachers' soft skills constitute an interdependent competence system in which creative, critical, intercultural, and emotional processes are co-constructed in practice. This perspective challenges fragmented approaches to teacher competence and provides a conceptual foundation for analyzing their interplay.

3. Methodology

The study employed a quantitative design to examine the interplay among teachers' soft skills as an integrated competence system. Empirical data were collected in 2026 using a structured questionnaire administered to secondary school teachers ($N = 1800$) across Lithuania. The research instrument consisted of previously validated psychometric scales. Specifically, 14 items were drawn from the Critical Thinking Questionnaire (CTHQ) (Kobylarek et al., 2022), 12 items were adapted from the Intercultural Sensitivity Scale (Gómez Yepes et al., 2023) and 12 items based on Soh (2000) were used to assess teachers' creative behaviour, conceptualized in this study as an empirical indicator of creative expression. In addition, a Social and Emotional Competencies Scale (Yoder, 2022) was included. These scales have been validated across diverse cultural contexts, supporting their appropriateness for the present study. The internal consistency of the constructs was assessed using Cronbach's alpha coefficients, with values of 0.70 or higher considered acceptable (Watkins, 2021). Data were analyzed using IBM SPSS Statistics 26. Descriptive statistics, including means (M) and standard deviations (SD), were calculated to characterise the study variables. As the data distributions approximated normality, parametric tests were employed. Pearson's correlation analysis was conducted to assess relationships among the variables, and multiple linear regression analysis was performed to estimate the associations between teachers' creative behaviour and intercultural sensitivity, critical thinking, and emotional intelligence. Standardized beta coefficients (β) were used to interpret effect sizes, and statistical significance was set at $p < 0.05$.

4. Results

Descriptive statistics of teachers' soft skills are presented in Table 1.

Table 1. Descriptive statistics of teachers' soft skills.

Variables	M	SD
<i>Emotional intelligence</i>	4.23	0.47
<i>Critical thinking</i>	4.15	0.55
<i>Creative expression</i>	4.10	0.53
<i>Intercultural expression</i>	3.92	0.64
Note. $N = 1800$		

The results (Table 1) indicate relatively high levels of all examined competencies. Emotional intelligence demonstrated the highest mean score ($M = 4.23$, $SD = 0.47$), followed by critical thinking ($M = 4.15$, $SD = 0.55$) and creative expression ($M = 4.10$, $SD = 0.53$). Intercultural expressions showed the lowest mean ($M = 3.92$, $SD = 0.64$), as well as the greatest variability among respondents.

Table 2. Pearson correlations among teachers' soft skills.

Variables	1	2	3	4
<i>Emotional intelligence</i>	-			
<i>Critical thinking</i>	0.53			
<i>Creative expression</i>	0.42	0.46	-	
<i>Intercultural expression</i>	0.59	0.56	0.48	-
Note. $N = 1800$; $p < 0.001$				

Pearson correlation analysis results are presented (Table 2). The correlation matrix reveals a network of statistically significant positive interrelationships among all examined competencies ($p < 0.001$), with emotional intelligence demonstrating the strongest associations. These findings confirm the interplay of teachers' soft skills as an integrated and interdependent competence system.

Table 3. Multiple regression analysis predicting creative expression.

Predictor	β	p
Emotional intelligence	0.41	$p < 0.001$
Critical thinking	0.29	$p < 0.001$
Creative expression	0.18	$p < 0.001$
Note. $R^2 = 0.52$; $N = 1800$		

Multiple linear regression analysis revealed that emotional intelligence was the strongest predictor of creative expression ($\beta = 0.41$, $p < 0.001$), followed by critical thinking ($\beta = 0.29$, $p < 0.001$) and intercultural expression ($\beta = 0.18$, $p < 0.001$). The model explained a substantial proportion of variance in creative expression ($R^2 = 0.52$), indicating that teachers' soft skills function as an interconnected system. These findings provide empirical support for understanding teachers' soft skills as a coherent and interrelated competence system.

5. Discussion

The findings provide empirical support for conceptualizing teachers' soft skills as an integrated and interdependent competence system. Emotional intelligence emerged as the central competence, demonstrating the strongest associations and predictive power, which is consistent with prior research (Mayer et al., 2016; Dolev & Leshem, 2017; Frenzel et al., 2021). The relationship between critical thinking and creative expression supports theoretical perspectives linking analytical and generative processes in teaching (Amabile & Pratt, 2016; Beghetto, 2023). Intercultural expression was also significantly related to all competencies, confirming its embedded and relational nature (Barrett, 2018). Overall, the results challenge fragmented approaches to teacher competence and highlight the importance of integrated competence development. However, the use of self-reported data and the cross-sectional design limit causal interpretation. Future research should explore longitudinal approaches to examine the dynamic development of these competencies.

6. Conclusions

This study demonstrates that teachers' soft skills function as an integrated competence system, with emotional intelligence as a central component. The findings challenge fragmented approaches and support the need for integrative models of teacher competence. Further research should examine how these competencies develop in different educational contexts.

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EDUCATOR ESCAPE ROOMS: PLAY, ASSESSMENT AND SOCIAL EMOTIONAL LEARNING

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Abstract

Teachers are expected to create learning environments that are rigorous, engaging, and student-centered, yet university-based teacher preparation often relies on lecture-based instruction. To prepare teacher candidates (TCs) to teach in more engaging ways, teacher educators must model the kinds of pedagogies they hope candidates will use. This paper examines how playful pedagogy, grounded in the Center for Reaching and Teaching the Whole Child's (CRTWC) framework for social and emotional learning (SEL) and culturally responsive teaching, can deepen course learning while strengthening teacher candidates' social-emotional competencies and excitement about teaching. In our case study, teacher candidates in a foundations of lesson planning course participated in an immersive escape-room-style formative assessment review. As teams solved clues and puzzles, they experienced productive struggle, collaboration, and shared problem-solving, later analyzing how these practices supported engagement, relationships, and SEL development. Using the CRTWC's framework, we explore how playful pedagogies can foster SEL skills, such as self-awareness, relationship building, and collaborative problem solving, while reinforcing rigorous academic content. We also consider how artificial intelligence tools can support teacher educators in designing high-engagement learning experiences more efficiently.

Keywords: *Teacher preparation, engagement, play, social emotional learning.*

1. Introduction

Nearly every university introduction to education course utilizes Vygotsky's theory that argues that learning is socially constructed and active (1978). Yet, as demands on instructors grow, teacher education courses can default to lecture-based instruction. While direct instruction has value, our university classrooms should also model the student-centered, discourse-rich, and joyful learning environments we hope TCs will create for children. Lortie's work reminds us that teachers often replicate the kinds of teaching they experienced as students or observed as candidates (1975). If we want TCs to design engaging learning experiences for school-aged students, teacher educators must model those practices in their own courses.

Research also suggests that playful learning can create a more positive, low-stress learning environment, supporting engagement, belonging, and knowledge acquisition (Krashen, 1986). Because teaching is learned through observation, rehearsal, and active application, teacher education should include highly engaging pedagogies such as humor, games, role-play, creativity, and collaboration. Playful pedagogies can strengthen SEL, engagement, classroom climate, and belonging while reducing stress (Darwich, DeBay, Forbes, & Mahfouz, 2025). This paper examines how an escape-room-style assessment activity in a university teacher education course reinforced essential course concepts while supporting TCs SEL skills.

2. The pedagogy of play

Play is not a break from serious learning; it is one of the most powerful pathways into it. Playful pedagogies encompass a range of approaches, including simulations, games, role-play, and creative problem-solving, all united by their emphasis on joy, levity, and active participation (Forbes, 2021). Rather than entertaining alternatives to traditional instruction, these approaches promote experimentation, collaboration, critical thinking, and deeper meaning-making (James and Nerantzi, 2019; Zosh et al., 2018).

What matters most is the underlying philosophy: that play is not the opposite of rigorous learning but one of its most natural and effective expressions (Brown, 2009).

This reframing carries particular weight in teacher education. TCs who experience playful pedagogy firsthand, rather than merely reading about it, develop greater confidence, stronger SEL competencies, and a clearer sense of how play can serve as a vehicle for genuine learning (Darwich et al., 2025). When teacher educators model playful approaches, they simultaneously teach content, build community, and demonstrate the kind of joyful, student-centered classroom culture their candidates are being prepared to create.

2.1. Escape rooms: Rooted in the pedagogy of play

While there are multiple forms of play-based learning, the escape room design provides significant opportunities to collaborate, take risks, and reach deeper learning. Research on academic escape rooms points to their promise as high-engagement learning experiences. Louie Montoya, Instructor at the Design School at Stanford University, founded the Deeper Learning Escape Room, as a way to assess one's skills at collaboration, communication, creative problem solving, and critical thinking (2025). His work was inspirational to many teachers, and they created more escape rooms for teachers and high school students as highly-engaging formative assessment and social emotional skill development experiences.

The benefits of educational escape rooms are highly appealing, but the amount of time, effort, and preparation required to create multiple academic puzzles is a barrier to more widespread classroom use. However, now teachers can utilize artificial intelligence tools like ChatGPT to help design escape rooms like academic puzzles for their students in minutes.

2.2. Educator escape room: The culmination of a foundations in lesson planning course

Our case study looks at the use of an Educator Escape Room in an introductory lesson planning course taught to TCs as part of their Bachelors Degree in Elementary Education. The course was taught during the Fall of 2025, by an instructor who has taught the class annually for eleven years. The course introduces students to the Effective Teaching Cycle (Plan - Teach - Assess) and explores research on how students learn. For the previous ten years the instructor ended the course with a lecture-based review of the content, covering all six learning objectives in the course. During the Fall of 2025 in an effort to model playful pedagogies for the TCs, the final course review was instead presented as a game-based escape room. Each learning objective was tied to one puzzle in the escape room. TCs worked in small groups of four to demonstrate their knowledge of the learning objective, by completing an academic puzzle-based task. Once the task was completed correctly, the puzzle was solved, giving a hint to where to go to find the next task.

The instructor prompted ChatGPT to create a hands-on assessment for each of the six learning objectives. With a few additional prompts to better align with research shared in the course, the instructor had six activities (e.g., card sorts, lesson plan analysis) to measure understanding of the course content. Last, the instructor prompted ChatGPT to match each activity to one of six escape room props (e.g., invisible ink pens, locked boxes, hollow-core books, etc.) and to design a clue that was visible only when the prompt was answered correctly and completely. One task required TCs to complete a card sort, placing the stages of lesson plan design into the correct order following Wiggins & McTighe's Backwards Design (2005). When in the correct order, **a bold and underlined letter** on each card spelled "*find the book that isn't as it looks.*" This clue led TCs to the bookshelf to find the hollowed out book with the second activity inside. Next, TCs were asked to determine whether a teaching strategy had a high or low effect size- reengaging them with Hattie's meta-analysis of high leverage teaching practices.

Like each of the ten years before, the TCs arrived to the final class session showing signs of exhaustion and burn out. Learning that the review for the final would be in the form of an escape room, the students warmed considerably. In small groups, the TCs worked for an hour to demonstrate their knowledge of the six learning objectives. The shift in the learning environment from true burnout to joyful engagement was remarkable. The classroom culture grew as students began working together and engaging in academic discourse. They persevered through the six difficult tasks, many requiring them to revise their thinking. Equally notable were the relationships that developed between the TCs through their teamwork in moments of productive struggle. The TCs shared that they were inspired to try an escape room academic task in their own student teaching classrooms and learn more about the impact of play on academic and social emotional learning.

2.3. Educator escape rooms and Social Emotional Learning (SEL)

The CRTWC framework provides a lens for understanding how teachers support students' social, emotional, and cultural development through intentional instructional moves, such as relationship-building, collaboration, productive struggle, and deep engagement. We used the framework to examine how the playful instruction of the escape room gave TCs a lived, embodied experience of these competencies as they built relationships, collaborated across differences, managed uncertainty, negotiated ideas, and persisted through challenge. The escape-room activity allowed candidates to experience whole-child teaching in action and reflect on how they might model similar practices in their own classrooms. Coupling the CRTWC framework with playful pedagogy reframes play as intentional design for both academic learning and whole-child development.

3. Next steps and conclusion

The case study suggests that the Educator Escape Room supported TCs' engagement with course content while also creating opportunities to practice SEL competencies such as collaboration, communication, and productive struggle. These promising insights have shaped our next steps as a collaborative research team. During the 2026–27 school year, we plan to examine how teacher candidates adapt and incorporate playful pedagogies, including escape-room-style activities, into their own emerging teaching practice.

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SLOVAK VOCATIONAL INSTRUCTORS' SELF-CONCEPT

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Abstract

This research focuses on instructors (trainers) working in the dual vocational education and training (VET) system in Slovakia. Dual VET is a framework for vocational education and training for a profession that is based strongly on students' workplace experience. In Slovakia, significant transformations of the vocational education and training started in 2015. Since this year, employees positions in companies can be established following the new legislature. These employees are called "instructors". They have strong positions in companies in transferring work experience to students at a workplace. This research is divided into two studies, employing a mixed-methods research design, integrating both quantitative and qualitative methodologies. In Study I, we posed the following research questions: 1) What distinct profiles of vocational instructors can be identified? and 2) What common characteristics do they share? To answer these questions, semi-structured interviews were conducted with 23 vocational instructors across diverse workplaces in Slovakia. The interviews were audio-recorded and transcribed, and the resulting transcripts were analysed using open and concept coding. The professional typology that emerged from the interviews comprises five distinct vocational instructors' profiles: (a) Visionaries, (b) Networkers, (c) Coordinators, (d) Solitaires, and (e) Ignorants. In Study II, we asked two research questions: 1) Which components of self-concept can be identified in vocational instructors? 2) How these components of professional self-concept interrelate, i.e., to what extent they form a cohesive whole? To analyse instructors' self-concept, a new self-rating questionnaire was developed and validated. The research sample for this study consisted of 386 vocational instructors employed across a range of industries, such as automotive manufacturing and hotel management. The data provided evidence that the instructors' self-concept can be segmented into a four-component model comprising: (a) self-efficacy, (b) task perception, (c) professional development, and (d) perception of corporate values. The relatively high mean scores across all components suggest that self-efficacy, professional development, task perception, and corporate values are robust elements of their vocational self-concept. The differences between the mean scores of these components are minimal, with self-efficacy and professional development receiving the highest rating. Furthermore, the positive and statistically significant correlations among the components indicate that they are interconnected, suggesting that vocational self-concept functions as a holistic personality characteristic for vocational instructors.

Keywords: *Dual VET, instructors, instructor's professional typology, instructor's self-concept.*

1. Introduction

This study is focused on instructors working in the dual vocational education and training (VET) system in Slovakia. Since this year, employees positions in companies can be established following the new legislature. These employees are called "dual VET instructors". This article presents two distinct components of a comprehensive research project investigating vocational instructors within Slovak enterprises. These components are referred to as Study I (a qualitative exploration utilizing semi-structured interviews) and Study II (a quantitative investigation utilizing self-rating scales).

Study I: Typology of vocational instructors. The aim of this study was to identify professional types of vocational instructors. The research questions were: 1) What distinct profiles of vocational instructors can be identified? 2) Which common characteristics they share? These questions aimed to understand the "voice" of vocational instructors regarding their training of secondary vocational school students. Specifically, we sought to understand the instructors' relationship to their work, to students, and to the company and society, respectively. However, we also wanted to determine what types of instructors in Slovakia engage in working with students, and how this activity satisfies them or shapes them. To address this, 23 semi-structured interviews were conducted with vocational instructors (19 males and 4 females) across diverse workplaces in Slovakia. The interviews took place on the premises of the respective companies; they were audio-recorded and transcribed into written form, which was then analysed using

open and concept coding. The instructors held various positions within the company (i.e., employees, managers, and freelancers) with different functions related to vocational education. The instructors worked in various companies, ranging from large to medium-sized enterprises. It was the size of the enterprise that was important for the role in which the instructor found themselves. This is because in Slovakia, there are large enterprises that have established independent training canterers, allowing an instructor to work as an instructor. Here, a shift in professional orientation occurred. From being a professional in a professional field, e.g. welding or car paintwork, one becomes an expert in educating young people in the particular field. In medium-sized and small companies, creating such a position is not possible. The instructors had been working in their position for 5 to 7 years and were between 45 and 65 years old. The age range of the instructors indicates that experienced specialists are dedicated to training young people within the companies.

Study II: Self-concept of vocational instructors. This study examines how instructors think about themselves and their work, how they perceive their role, what values and beliefs they prefer, and what relationship they have with their work and the company where they operate. All these aspects represent an internal characteristic of instructors, the vocational self-concept. The research question were: 1) Which components of self-concept can be identified in vocational instructors? 2) How these components of professional self-concept interrelate, i.e., to what extent they form a cohesive whole? The research sample of the self-concept part of the study focused on 386 vocational instructors who were employed in a range of companies. Men predominate in the sample (74.1%), because these instructors operate largely in male-dominated companies. These comprise rail transport, automotive production, automotive components manufacturing, railway wagon manufacturing, the electrical engineering industry, heating engineering, and meat processing. Conversely, predominantly female sectors are represented by instructors from textile and footwear production, pharmaceutical manufacturing, hospitality (restaurant and hotel services), postal services, and public administration.

2. Methods and results

The research method in *Study I* was semi-structured interview. Interviews were audio-recorded, transcribed, and subsequently analysed using open and axial coding. For *Study II*, a self-rating questionnaire was employed. Because no suitable research instrument was available to meet our specific objectives, we developed a novel instrument. Based on its conceptual content, we refer to it as the *Professional Self-concept Questionnaire for Dual Education Instructors*. A detailed description of the development and psychometric validation of this questionnaire has been published by Gavora and Wiegerová (2026). The results are presented sequentially, beginning with Study I and followed by Study II. In Study I, the following typology of vocational instructors in Slovakia has been identified in interviews: **Visionaries** – They are in love with their work, constantly believe in changes and success, and believe in the meaning of working with students. They became instructors through an agreement with the company, as based on their personal conviction. **Networkers** – They try to connect the school, family, and company. They often encounter students' problems and try to solve them. However, they frequently break the rules by directly contacting the families, which they are not supposed to do. **Coordinators** – They try to organize their work while seeking to understand the students. However, their work is primarily focused on administrative activities. They are not in direct contact with the students during teaching. They are more oriented toward the field of adult education. **Solitaires** – They organize work for both students and instructors but do not have much understanding for the students. They are afraid that if they pass their know-how on to someone else, they will lose their specialized position within the company. **Ignorants** – Indifferent to the students, they became instructors under pressure from the company. The company forced them into this activity because they had no other expert in the given field. Three main characteristics of vocational instructors emerged from the interviews: A) Instructors' perceptions of students and their satisfaction with the focus of training within their company. B) Perceptions of their work by the employer. C) Satisfaction or dissatisfaction with the role, and support of, the state, family, and company regarding the student training.

In *Study II*, factor analyses generated four factors (components), which we consider to be the vocational instructors' professional self-concept profile. Based on their content, we named these components: **self-efficacy, perception of activity, professional development, and corporate values**. The arithmetic means for the professional self-concept components are remarkably high: 4.12 (SD = 0,58) for self-efficacy, 4.12 (SD = 0,65) for professional development, 4.03 (SD = 0,78) for corporate values, and 3.76 (0,75) for the perception of tasks. All mean scores exceed the midpoint of the five-point Likert scale, with three components (self-efficacy, corporate values, and professional development) surpassing it substantially. This indicates that these four components serve as powerful elements of vocational instructors' professional self-concept, constituting an integral part of their professional makeup. The correlations between the components of the vocational self-concept are positive. This means that there is a

direct relationship between them. Further, all correlations are statistically highly significant. The correlations ranged from 0.475 to 0.624. In evaluating them, we can rely on Cohen's (1988) interpretation: correlations from 0.30 to 0.50 should be considered medium, while correlations from 0.50 to 0.70 are considered strong. The identified correlations thus show that the relationship between the individual components of vocational self-concept measured in our sample of respondents is relatively strong. This also suggests that these components are interconnected. The vocational self-concept is holistic. Its components form a consistent whole. For example, an instructor's belief in the good quality of their educational activities with students (perception of tasks) can increase their self-efficacy.

3. Discussion and conclusion

Similar findings to those emerging from the qualitative component of our study can be found in the work of the Swiss researcher Besozzi (2026), who examined the career trajectories of instructors. Consistent with her findings, our results suggest that most respondents perceived the instructor position as both a challenge and a source of motivation. They expressed considerable satisfaction in becoming “quasi-teachers” who could pass on their professional experience to future generations. Besozzi further reported that participants in her study commonly perceived the role of the instructor as comparable to that of a school teacher, a conclusion likewise supported by our findings. In their accounts, instructors frequently referred to their own school experiences and drew on didactic and methodological approaches remembered from the school environment to explain their current teaching practices. The components of the vocational self-concept that emerged from the quantitative data exhibit certain overlap with conceptualizations of the professional self-concept of vocational education teachers. Several studies have reported teacher competence as a key component of professionalism (Smith & Tuck, 2023). In this study, competencies are implicitly included in the self-efficacy component, as belief in one's own abilities must be based on existing professional knowledge and skills. The perception of tasks was identified as a component of self-concept in studies by Bükki and Fehérvári (2024). Conversely, corporate values were not identified in the literature on self-concept of vocational education teachers, because teachers are employees of schools and not enterprises. This research contributes to a deeper understanding of vocational instructors and their professional role within dual and vocational education system. The findings indicate that vocational instructors perceive their work not only as the transmission of occupational knowledge and skills, but also as an educational and developmental responsibility closely connected to their professional self-concept. The research revealed strong links between prior occupational experience, teaching/training practices, self-efficacy, and commitment to supporting students' learning. The study also highlighted the importance of workplace culture and professional development in shaping instructors' experiences and career trajectories.

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