Exploring Teachers' Self-Directed Learning: Frequency, Application, and Professional Experience Differences

Dominika Temiaková
Matej Bel University in Banská Bystrica, Faculty of Education, Department of Pedagogy and Andragogy, Slovakia, *dominika.temiakova@umb.sk*

Ivan Pavlov
Matej Bel University in Banská Bystrica, Faculty of Education, Department of Pedagogy and Andragogy, Slovakia, *ivan.pavlov@umb.sk*

Self-directed learning (SDL) has become an increasingly important component of teacher professional development, yet little is known about its patterns and challenges in the Slovak context. This study analysed SDL among 1,057 primary school teachers recruited through convenience sampling across Slovakia. Data were collected using a custom-designed 17-item questionnaire assessing frequency and sources of SDL, its application in practice, and perceived personal and motivational barriers. Reliability of the two multi-item scales was satisfactory (Cronbach's α = .76–.79; McDonald's ω = .75–.77). Descriptive statistics showed that 51.4% of respondents engaged in SDL frequently. The most valued sources were professional peer discussions and print/digital resources, while universities were rated the least relevant. Time emerged as the most demanding aspect of SDL. ANOVA showed no statistically significant overall differences in the frequency of self-directed learning across career stages. However, significant effects were found for the perceived usefulness of private providers and higher education institutions, as well as for barriers related to family time, financial burden, time management, and application of acquired knowledge. The findings demonstrate that SDL is a widespread practice among Slovak teachers, but its forms, perceived value, and barriers vary significantly with professional experience. These results highlight the need for differentiated support measures tailored to the career stage of educators.

Keywords: self-directed learning, teachers, professional development, barriers to learning, career stage

INTRODUCTION

Teacher professional development remains a central topic in educational research. Increasing expectations of the teaching profession, frequent curriculum reforms, and the need to respond to changing societal demands emphasize the continuous updating of teachers' professional competencies (Avalos, 2011; Osei-Owusu, 2022; Nevado-Luna et al., 2025; Karimi et al., 2025), and this in line with the requirements for critical thinking

and continuous adaptation in 21st century education (Bhat & Dahal, 2023). Current professional development frameworks increasingly advocate a lifelong learning approach, recognizing that teacher growth is a continuous process ranging from initial training to retirement (AbdulRab, 2023). This paradigm shift requires a rethinking of how motivation, contextual support, and specific career-level needs are integrated into self-directed learning initiatives, ensuring relevance and effectiveness throughout a teacher's professional life.

Supporting teacher development is a priority in both the European Union and national educational policies. In Slovakia, primary school teachers are preparing for a curriculum reform to be implemented in 2026. Effective methods and forms of professional support are crucial to help teachers adapt to major content and methodological changes.

Traditional forms of teacher training, such as accredited courses or institutional workshops, are increasingly supplemented or replaced by approaches that emphasize autonomy and self-responsibility. In this context, self-directed learning (SDL) has received particular attention. SDL enables teachers to actively and purposefully develop professional competencies outside formal educational frameworks.

SDL is defined as a process in which individuals independently initiate, plan, implement, and evaluate their learning (Knowles, 1975; Garrison, 1997). It encompasses both the content and control of learning, providing a framework for autonomous career development. In teaching—a dynamic profession subject to rapid changes—SDL allows for flexibility and responsiveness but may encounter obstacles, including time constraints, psychological burdens, and limited access to resources (Lohman, 2006; Sebotsa, de Beer, & Kriek, 2020).

Research indicates that the nature, intensity, and forms of SDL can vary according to teachers' career stages. Novice, mid-career, and veteran teachers often exhibit different needs, strategies, and perceived barriers (Day & Gu, 2007; Scoupe, Delnoij, & Beausaert, 2024). However, empirical knowledge on SDL among Slovak primary school teachers remains fragmented.

In light of these challenges and gaps in existing knowledge, the present study aims to provide an empirical insight into self-directed learning among Slovak primary school teachers. Specifically, the study seeks to (a) determine the frequency and forms of teachers' engagement in self-directed learning, (b) identify the main sources, applications, and perceived barriers related to this process, and (c) analyze how these aspects vary across different stages of professional experience. By addressing these objectives, the research contributes to a more nuanced understanding of the developmental needs and constraints of teachers in Slovakia, and offers evidence relevant for both educational policy and the design of support systems for professional development.

Context and Review of Literature

The concept of self-directed learning (SDL) has a long developmental trajectory in literature and has become a key framework for understanding adult learning. Knowles

(1975) first systematically elaborated SDL, emphasizing that self-directed learners can identify their own needs, set goals, select strategies, and evaluate learning outcomes without necessarily depending on an external facilitator. Garrison (1997) later expanded this perspective by proposing a three-component model that includes cognitive, motivational, and metacognitive dimensions. He highlighted the importance of balancing learner autonomy with strategic management of the learning process. In the teaching profession, which demands continuous adaptation to institutional, societal, and technological changes, SDL is increasingly recognized as essential for professional flexibility and sustainable growth (Desimone, 2023; Sebotsa, de Beer, & Kriek, 2020; Smith & Wyness, 2024).

Self-directed learning in teaching cannot be considered in isolation from the broader framework of professional development. Professional development is a dynamic and lifelong process aimed at enhancing professional competencies, pedagogical reflection, and adaptation to changing educational conditions (Avalos, 2011). A significant trend in contemporary professional development is the shift from externally driven, formal learning activities—such as institutional courses and accredited training—to approaches that foster teacher autonomy, decision-making, and initiative. Within this framework, SDL is often associated with non-formal and informal learning, which are not systemically organized but emerge in response to teachers' real-time needs (Eraut, 2010). Unlike formal learning, which is structured and certification-focused, non-formal and informal learning rely on individual interest, collegial interaction, independent study, and reflection on practice (OECD, 2021).

Teachers' self-learning can take many forms, ranging from reading literature and attending webinars to collaborating in professional communities, creating instructional materials, or reflecting on pedagogical decisions (Scoupe, Delnoij, & Beausaert, 2024). Research indicates that many teachers perceive informal learning as more effective, relevant, and flexible than centralized institutional programs (Lohman, 2006; Wermke, 2010). However, self-directed learning requires a high degree of self-regulation, including the ability to plan, monitor, and evaluate one's learning strategies—a skill that may not be uniformly developed across different stages of a teaching career.

SDL is influenced not only by individual traits but also by the social and organizational context. The culture of the school, the availability of support from colleagues or school management, and the presence of collaborative professional communities significantly shape teachers' engagement in self-directed learning (Opfer & Pedder, 2011; Hodkinson & Hodkinson, 2007). In supportive environments, teachers demonstrate higher initiative and are more likely to integrate SDL into their everyday practice. This perspective highlights that SDL has both individual and social dimensions, as it emerges at the intersection of personal motivation, professional identity, and organizational culture.

The factors affecting SDL can be grouped into three interrelated domains: individual, professional, and organizational-contextual (Caffarella, 1993; Opfer & Pedder, 2011). Effective SDL requires a holistic approach that considers both intrinsic motivation and the external ecosystem, which may either support or hinder professional autonomy

(Hosseini & Nimehchisalem, 2021). Integrating these factors is crucial for enhancing teachers' self-efficacy, particularly in adapting to evolving learning environments and technological advancements (Shukri & Matore, 2023).

At the individual level, metacognitive regulation—defined as the ability to plan, monitor, and evaluate one's learning—is a key determinant of successful SDL (Zimmerman, 2002; Artelt et al., 2003). Intrinsic motivation, including interest in professional growth, autonomy, and a commitment to teaching quality, further facilitates engagement in self-directed learning (Deci & Ryan, 2000). Conversely, motivation driven by formal requirements or institutional pressures may result in superficial or discontinuous participation in SDL activities (Tomšik, 2016).

Teachers' professional trajectory also influences the nature and goals of SDL. Early-career teachers often focus on acquiring practical strategies and operational skills, while mid-career teachers engage in more reflective and specialized forms of learning (Day & Gu, 2007; Feiman-Nemser, 2001). In later stages, however, motivation may decline due to exhaustion, reduced professional engagement, or lack of institutional recognition (Hargreaves, 2005).

Contextual factors at the school and system levels can either enable or limit SDL. Common barriers include time constraints, limited access to quality resources, and insufficient support from school leadership (Lohman, 2006; Opfer & Pedder, 2011; Kalenda & Kočvarová, 2021). Conversely, collaborative cultures and professional communities enhance sustained and meaningful engagement in SDL (Hodkinson & Hodkinson, 2007). Supportive school environments that foster autonomy, competence, and meaningful professional impact further encourage teachers to engage in continuous professional development and implement innovative pedagogical practices (Cheon et al., 2020; Wang et al., 2024; Bao, 2024).

Structural barriers also include less visible factors such as low self-confidence, lack of feedback, or fragmented professional self-perception, which can impede SDL and lead to discontinuation of self-development initiatives (Guglielmino, 1978, 2008). These individual, professional, and contextual factors interact dynamically, shaping the frequency, forms, and outcomes of teachers' SDL activities.

Given this complexity, it is important to investigate how SDL varies according to teaching experience, which serves as a proxy for professional identity, expertise, and developmental needs. Based on this theoretical framework, the present study examines the frequency, forms, and perceived barriers of self-directed learning among Slovak primary school teachers. The study also explores how these dimensions differ according to length of teaching experience, addressing the following research questions:

Based on the above theoretical background, it can be assumed that the nature of teachers' self-education is not homogeneous but differentiated depending on the stage of their professional career. From the point of view of pedagogical practice, the length of time in the profession is one of the relevant indicators that allows for the identification of developmental patterns, specific needs, and obstacles related to self-development. Therefore, this study aims to examine the frequency, forms of use, and perceived

barriers to self-development among primary school teachers in Slovakia, and to analyze how these aspects vary according to the length of teaching experience. In line with these aims, the following research questions were formulated:

a) What is the frequency of engagement in self-directed learning among Slovak primary school teachers?

b) Which sources of self-directed learning are perceived as the most relevant, and how are they applied in pedagogical practice?

c) What barriers and task-related difficulties do teachers encounter in self-directed learning, and what personal costs are most frequently reported?

d) Do these aspects of self-directed learning (frequency, sources, application, barriers) differ depending on the length of professional experience?

METHOD

Research sample

The research population consisted of 1057 primary school teachers in Slovakia who were included in the study based on availability (conventional) sampling. In terms of gender representation, 90% were female (n = 950) and 10% were male (n = 105). Respondents were at different stages of their professional careers: 17.8% (n = 188) were novice teachers with up to 5 years of experience, 48.2% (n = 510) were experienced teachers with 6-25 years of experience, and 34% (n = 359) had more than 26 years of teaching experience. Data collection was conducted through an online questionnaire distributed between December 2024 and January 2025. Before data collection, all respondents were informed of the anonymity of their responses and agreed to participate in the research by ethical standards.

Although the sample was obtained through convenience sampling, its size (n = 1057) allows for statistically interpretable estimates. Based on the approximation method proposed by Krejcie and Morgan (1970), and assuming maximum variability (p = 0.5) and a 95% confidence level, the estimated margin of error for this sample is approximately ±3.02%. This level of statistical precision supports the interpretability of proportional findings, although generalizability remains limited due to the non-probability sampling procedure.

Research instrument

Due to the absence of a standardized instrument for measuring aspects of teachers' SDL in the Slovak context, a self-constructed 17-item questionnaire was developed. The items were generated on the basis of a preliminary survey conducted on a smaller sample of teachers, from which the most frequently recurring categories of SDL practices, barriers, and forms of support were extracted. The instrument was designed to capture the multidimensional nature of SDL, including the perceived importance of SDL for professional development, its financial and time demands, the practical application of acquired knowledge in pedagogical practice, barriers limiting effective self-education, as well as available forms of institutional and informal support.

For this study, six content areas of the questionnaire were included in the analysis, of which two were multi-item scales and three were single-item indicators. The first scale,

Perceived relevance of different sources of SDL, consisted of five items (e.g., "*Available print or electronic professional learning resources,*" "*Offer of universities*"; Cronbach's α = .76, McDonald's ω = .75). The second scale, Perceived difficulty of SDL tasks and associated personal costs, contained ten items (e.g., "*Maintain continuous motivation during self-directed learning,*" "*Time spent with family*"; Cronbach's α = .79, McDonald's ω = .77). Both scales employed ordinal response formats, with items rated either on a 6-point scale (0–5; e.g., perceived relevance of different sources of SDL) or on a 3-point scale (1–3; e.g., declared personal costs associated with SDL). In addition, three non-scaled variables were analyzed, focusing on the effort invested, time allocation, frequency of SDL activities, and financial costs.

Furthermore, four demographic variables were included: gender, length of experience, employee category (teacher), and school level (ISCED 1 and ISCED 2). A pilot validation of the instrument was carried out before the main data collection and confirmed the comprehensibility and content relevance of the items.

Data analysis

The collected data were analyzed using both descriptive and inferential statistical methods. Descriptive statistics (mean, standard deviation, skewness, and kurtosis) were used to characterize the distribution of responses across key variables related to self-directed learning. In addition, the internal consistency of the two multi-item scales was assessed using Cronbach's alpha and McDonald's omega coefficients, both of which indicated acceptable reliability. Normality of distribution was examined using the D'Agostino test (D'Agostino & Pearson, 1973), and where assumptions were met, one-way analysis of variance (ANOVA; Field, 2013) was applied to assess group differences, particularly concerning the length of professional experience. In cases where ANOVA indicated significant effects, post hoc comparisons were conducted using the Least Significant Difference (LSD; Field, 2013) test to explore pairwise differences between groups. All statistical analyses were performed using the software packages SPSS (IBM SPSS Statistics 25.0) and JASP (version 0.14.1), ensuring analytical transparency and reproducibility.

FINDINGS

Self-directed learning among educators: Frequency, sources, use, and perceived barriers

In response to the question on the frequency of SDL, most respondents indicated a frequent or regular form of engagement. The answer 'frequently' was selected by 51.4% and 'regularly' by 29.5% of the participants, for a total of 80.9% of all valid responses. Only 2.5% of respondents marked the options "rarely" or "not at all", indicating a low incidence of complete disengagement in this area. A further 16.1% declared that they engage in self-development "occasionally", which may indicate an unsystematic or casual approach to self-development.

Table 1
Frequency of SDL among respondents (N = 1069)

		N	%ᵃ	Valid %	Cum. %
Valid	Not at all or minimally	16	1,5	1,5	1,5
	Rarelly	11	1,0	1,0	2,5
	Occasionally	172	16,1	16,2	18,7
	Often	550	51,4	51,7	70,4
	Reguraly	315	29,5	29,6	100,0
	Total	1064	99,5	100,0	
Missing	System	5	0,5		
Total		1069	100,0		

*Note.: N – Number of observations; a – Percentages are rounded to one decimal; Cum. % – Cumulative %.

Among the individual sources of SDL, respondents ranked personal professional discussions with colleagues to address professional issues (M = 3.69; SD = 1.18) and print or e-learning resources (M = 3.60; SD = 1.24) highest. These two categories represent the most important pillars of individual professional development as rated by research participants. In third place, the offerings of public education providers (e.g., the National Institute of Education and Youth, hereafter NIVAM) were rated slightly lower (M = 3.38), but still in the positive range. Private providers of education programmes were perceived to be less important (M = 2.98), while the offer of universities ranked last with the lowest mean (M = 2.18) and also the highest variance (SD = 1.47). Additionally, 16.8% of the research participants reported that they did not need any external entities for SDL, which may indicate either a high degree of autonomy or some degree of isolation from institutionalized forms of professional development.

Table 2
Perceived relevance of different sources of SDL

	N	M	SD	SK	KU
Available print or electronic professional learning resources	1054	3,60	1,240	-0,758	0,120
Professional face-to-face discussions with colleagues to address professional issues (methodical institutions)	1058	3,69	1,175	-0,826	0,347
Offer of public providers of professional development training programmes (e.g., NIVAM)	1060	3,38	1,264	-0,563	-0,221
Offer of private providers of professional development training programmes	1052	2,98	1,351	-0,361	-0,515
Offer of universities	1039	2,18	1,465	0,122	-0,902

Note: MIN – 1 (the last significant); MAX – 5 (the most significant); N – Number of observations; M – Mean; SD – Standard Deviation; SK – Skewness; KU – Kurtosis.

Among the declared domains of application, SDL was most frequently associated with direct pedagogical work in the classroom (44.7 %). This suggests that teachers primarily connect their self-development efforts with the improvement of their didactic strategies and student interactions. A significant portion (29.2 %) also reported benefits in career progression and broader professional development, reflecting a strategic orientation

toward qualification growth and institutional advancement. Applications in non-instructional pedagogical contexts (11.8 %) and personal interest areas (12.8 %) were reported less frequently but still represent meaningful areas where SDL extends beyond direct teaching duties. Only 1.5 % of responses indicated that participants were unable to identify a specific benefit or selected "other," suggesting a high overall relevance of SDL in the professional lives of respondents.

Among the examined aspects, time-related costs were perceived as the most burdensome. The most frequently mentioned was the sacrifice of personal free time (M = 2.68), followed by reduced time spent with family (M = 2.59). Both items exceeded the midpoint of the scale, indicating that for many respondents, SDL competes with personal and relational time. In contrast, financial costs (M = 2.24) and especially learning effort (M = 2.16) were rated lower, though still above the minimal value. This may suggest that non-material and relational sacrifices represent the dominant perceived barrier to sustained SDL. It is also noteworthy that 8.8 % of respondents reported not sacrificing anything, indicating either non-participation or very low engagement in ongoing professional learning.

Among the analyzed competencies, respondents reported the greatest difficulty with organizing their time for SDL (M = 2.17) and maintaining long-term motivation (M = 2.14). These two areas appear to represent key challenges in sustaining a regular and effective SDL routine. The third highest difficulty was gathering appropriate learning materials (M = 2.12), which suggests that content curation and access to relevant resources also present a barrier for many.

Tasks such as defining goals, evaluating progress, and applying knowledge in practice received slightly lower average scores (all below M = 2), yet they still indicate a non-negligible level of perceived complexity. Overall, the findings point to a multi-level challenge: balancing time and energy, maintaining internal motivation, and navigating a fragmented or inaccessible resource landscape.

Table 3
Descriptive statistics for perceived difficulty of SDL tasks and associated personal costs.

Variables		N	M	SD	SK	KU
Difficulty of selected self-education tasks	Properly allocate time for self-education	1051	2,17	0,696	-0,246	-0,935
	Choose priorities (goals) for your self-education	1037	1,96	0,680	0,049	-0,837
	Evaluate progress in self-development	1037	1,91	0,603	0,038	-0,285
	Gather appropriate learning resources for self-education	1039	2,12	0,647	-0,125	-0,648
	Put into practice the knowledge and skills learned through self-education	1041	1,90	0,659	0,103	-0,710
	Maintain continuous motivation during self-education	1039	2,14	0,670	-0,169	-0,793
Declared personal costs associated with self-directed learning	Use their free time	1053	2,68	0,639	-1,763	1,699
	Time spent with family	1039	2,59	0,672	-1,345	0,460
	Financial resources	1022	2,24	0,719	-0,385	-1,008
	Learning efforts expended	1000	2,16	0,695	-0,221	-0,929

Note: MIN – 1 (not at all or minimally); MAX – 5 (very often); N – Number of observations; M – Mean; SD – Standard Deviation; SK – Skewness; KU – Kurtosis.

Differences in self-directed learning variables by length of professional experience

To explore whether the length of pedagogical or professional experience is associated with variation in self-directed learning patterns, several variables were compared across three experience groups: *up to 5 years*, *6 to 25 years*, and *more than 26 years*. The following statistically significant differences were observed: Although respondents with 6 to 25 years of experience reported the highest average frequency of SDL ($M = 3.10$), followed closely by those with more than 26 years ($M = 3.08$), the differences were not statistically significant ($F(2, 1060) = 2.070$, $p = .127$). This suggests that overall engagement in SDL does not vary substantially across career stages (Table 4). Although the overall ANOVA for SDL frequency across career stages was not statistically significant ($F(2, 1060) = 2.070$, $p = .127$), post hoc LSD analysis revealed a significant pairwise difference between teachers with up to 5 years of experience and those with 6 to 25 years. Specifically, early-career teachers reported significantly lower SDL frequency (mean difference = –0.135, $p = .047$). No significant difference was observed between early-career and late-career teachers ($p = .093$).

Table 4
Descriptive statistics and ANOVA results for frequency of SDL by length of professional experience

Sub-sample	N	M	SD	95% CI		df	F	p
				Lower	Upper			
up to 5 years	188	2,96	0,836	2,84	3,08			
6 to 25 years	513	3,10	0,799	3,03	3,17	2	2,070	0,127
more than 26 years	362	3,08	0,762	3,00	3,16			
Total	1063	3,07	0,794	3,02	3,12			

Note: N – Number of observations; M – Mean; SD – Standard Deviation; 95% CI – Confidence Interval for Mean; df – degrees of freedom; F – ANOVA; p – p-value (statistical significance).

Statistically significant differences emerged in the perceived usefulness of private providers ($F = 6.065$, $p = .002$) and higher education institutions ($F = 17.479$, $p < .001$). Teachers with less than 5 years of experience rated both private training ($M = 3.23$) and university offerings ($M = 2.64$) as more relevant compared to their more experienced counterparts (e.g., those with more than 26 years: $M = 2.81$ and $M = 1.87$, respectively). This may reflect a greater openness or need for structured development early in one's career, or a greater alignment with recent pedagogical training paradigms (Graph 1).
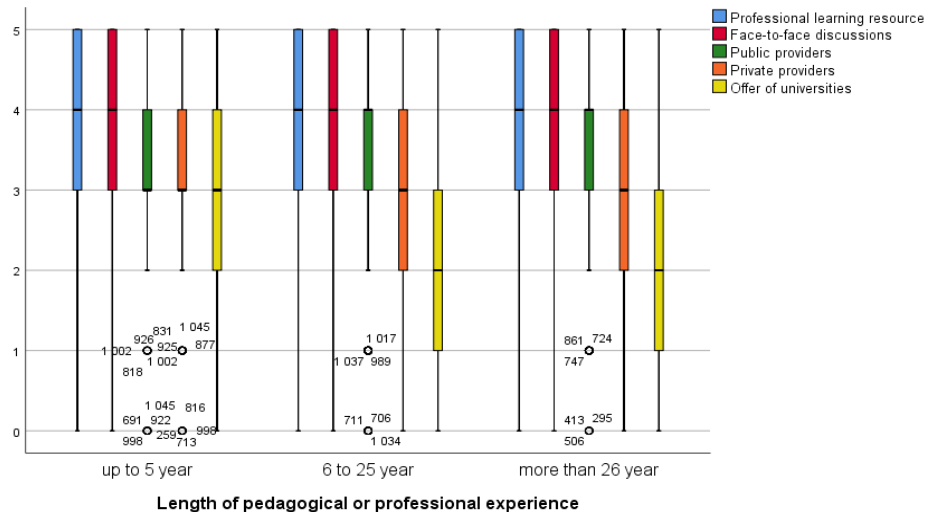
Graph 1
Differences in the perceived relevance of different sources of SDL by length of professional experience

Differences in perceived barriers and task-related difficulties were observed across career stages. Respondents with 6 to 25 years of experience reported the highest strain related to family time ($M = 2.64$), while those with more than 26 years perceived this cost as lower ($M = 2.51$; $F = 3.849$, $p = .022$). In terms of financial burden, early-career teachers rated it as significantly more salient ($M = 2.32$) than late-career teachers ($M = 2.14$; $F = 4.409$, $p = .012$). Regarding task difficulty, individuals in the early stages of their career reported greater challenges in organizing time for SDL ($M = 2.24$; $F = 6.359$, $p = .002$) and in applying acquired knowledge in practice ($M = 1.97$; $F = 4.291$, $p = .014$), suggesting that motivational and practical barriers are more prominent among less experienced educators. In contrast, more experienced respondents report lower perceived burden, potentially reflecting greater autonomy or routine in professional functioning (Graph 2).

Length of pedagogical or professional experience
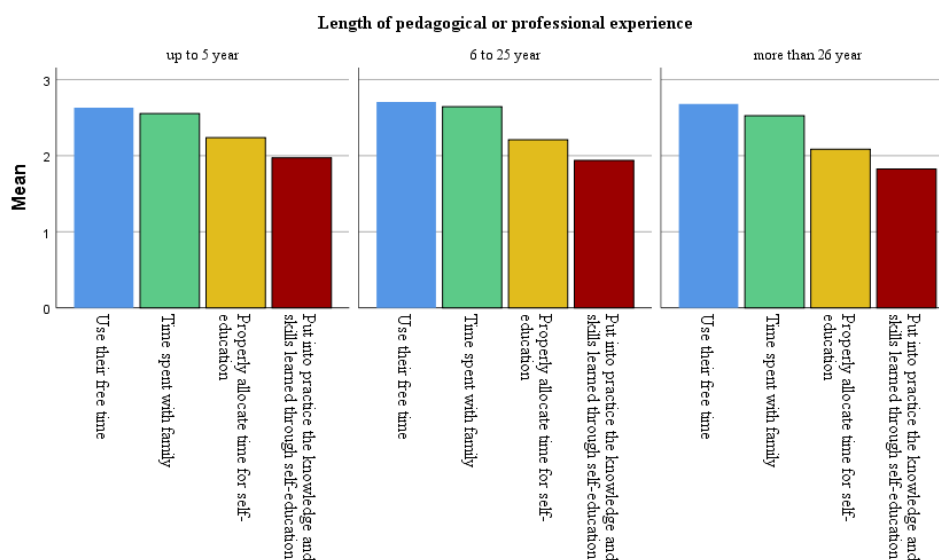
Graph 2
Sigificant differences in perceived difficulty of SDL tasks and associated personal costs by length of professional experience

DISCUSSION AND CONCLUSION

The rapid expansion of global knowledge demands that teaching be viewed as a profession requiring continuous updating of skills and competencies. Teaching must be viewed as a profession that constantly updates its knowledge, which is also a result of changes in didactic forms, methods, and means used in the pedagogical process, as well as the introduction of new competences for life that need to be taught to pupils. Teachers' self-directed learning (SDL) is a key mechanism for professional growth, enabling educators to adapt to evolving curricular, methodological, and societal demands (Candy, 1991; Knowles, 2005). The study confirms that SDL is a widespread and normative component of professional practice, with over four-fifths of respondents engaging frequently in SDL.

Collegial interaction and professional literature emerged as central sources of SDL, reflecting the importance of peer collaboration and accessible, context-relevant resources (Avalos, 2011; Kyndt, Gijbels, Grosemans, & Donche, 2016). In contrast, universities and private providers were rated as less relevant, suggesting a gap between institutional offerings and teachers' practical needs (Darling-Hammond, Hyler, & Gardner, 2017). SDL was primarily applied to classroom pedagogy, indicating a pragmatic focus, while career advancement and personal interest were secondary motivations (Bakkenes, Vermunt, & Wubbels, 2010).

Time constraints, especially the sacrifice of leisure and family time, were the most significant barriers, highlighting the tension between autonomy in learning and work–

life balance (Van Eekelen, Boshuizen, & Vermunt, 2005). Motivational factors and time management difficulties also challenge sustainable SDL, emphasizing the role of personal regulation and resilience (Schunk & DiBenedetto, 2020). Differences across career stages show that novice teachers rely more on structured external support but face greater difficulties in self-regulation, whereas experienced teachers encounter fewer barriers due to established routines (Huberman, 1993). The findings suggest several actionable recommendations:

1. Policy makers: Recognize and support SDL and collegial learning by allocating protected time and credit for informal professional development.
2. Universities: Design flexible, practice-oriented programs co-developed with teachers to bridge the gap between academic provision and classroom needs.
3. Professional development providers: Tailor offerings to career stages, focus on reported challenges (time management, motivation), and use short, practice-based formats.

Supporting teachers' SDL involves both conceptual and practical aspects. Conceptually, it deepens understanding of lifelong learning processes, including informal and SDL (Sala, Yates, & Gaskell, 2020). Practically, evidence-based models and tools are needed to enhance teachers' "learning to learn" competences and apply them effectively in classrooms.

Future studies should:

- Conduct longitudinal research to track SDL development across career stages.
- Use qualitative methods (interviews, case studies) to explore motivations, strategies, and barriers.
- Perform comparative studies across countries or institutions to identify contextual factors and good practices.
- Investigate the impact of SDL on classroom practice, student outcomes, and the role of digital technologies in professional growth.

Overall, the study underscores that SDL is integral to teachers' professional development and has significant implications for educational policy, institutional provision, and the cultivation of lifelong learning competencies in both teachers and students.

LIMITIONS

This study has several methodological and interpretive limitations that need to be considered when interpreting the results. Firstly, the non-probability selection of respondents, based on availability and willingness to participate, limits the possibilities of generalising the findings to the whole population of primary school teachers in Slovakia. Although the size of the research population allows for basic statistical inference, representativeness concerning regional, age, or occupational subgroups cannot be assumed.

Another limitation is the use of a self-constructed questionnaire that has not been standardised in terms of psychometric properties (e.g., reliability, validity). This may affect the reliability of some measures, especially scaled items reflecting subjective

experience or self-assessment. In addition, the self-attributional nature of responses may be biased by socially desirable behaviours or unconscious overestimation of one's activity.

An additional limitation is the single time frame of data collection, which does not allow for capturing developmental or seasonal fluctuations in attitudes toward self-enhancement (e.g., before the start of the school year vs. during the school year). Thus, the study focuses solely on descriptive and differential perspectives without the ability to capture the dynamics of professional learning over time.

ACKNOWLEDGMENTS

REFERENCES

AbdulRab, H. (2023). Teacher Professional Development in the 21st Century. *African Journal of Education and Practice*, 9(4), 39. https://doi.org/10.47604/ajep.2237

Artelt, C., Baumert, J., Julius-McElvany, N., & Peschar, J. (2003). *Learners for Life: Student Approaches to Learning. Results from PISA 2000*. OECD.

Avalos, B. (2011). Teacher Professional Development in Teaching and Teacher Education over Ten Years. *Teaching and Teacher Education, 27,* 10–20. https://doi.org/10.1016/j.tate.2010.08.007

Bakkenes, I., Vermunt, J. D., & Wubbels, T. (2010). Teacher learning in the context of educational innovation: Learning activities and learning outcomes of experienced teachers. *Learning and Instruction, 20*(6), 533–548. https://doi.org/10.1016/j.learninstruc.2009.09.001

Bao, Y. (2024). A dual mediation model of the association between principal inclusive leadership and teacher innovative behavior. *Scientific Reports*, 14(1). https://doi.org/10.1038/s41598-024-63332-0

Bhat, N., & Dahal, A. (2023). Self-Directed Learning, Its Implementation, and Challenges: A Review. *Nepal Journal of Health Sciences*, 3(1), 102. https://doi.org/10.3126/njhs.v3i1.63277

Caffarella, R.S. (1993), Self-directed learning. New Directions for Adult and Continuing Education, 1993: 25-35. https://doi.org/10.1002/ace.36719935705

Candy, P. C. (1991). *Self-direction for lifelong learning: A comprehensive guide to theory and practice*. Jossey-Bass.

Cheon, S. H., Reeve, J., & Vansteenkiste, M. (2020). When teachers learn how to provide classroom structure in an autonomy-supportive way: Benefits to teachers and their students. *Teaching and Teacher Education*, 90, 103004. https://doi.org/10.1016/j.tate.2019.103004

Komba, C. S., & Mwakabenga, J. R. (2020). Teacher Professional Development in Tanzania: Challenges and Opportunities. *IntechOpen*. https://doi: 10.5772/intechopen.90564

D'Agostino, R. B., & Pearson, E. S. (1973). Tests for departure from normality. *Biometrika, 60*(3), 613–622. https://doi.org/10.1093/biomet/60.3.613

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Palo Alto, CA: Learning Policy Institute.

Day, C., & Gu, Q. (2007). Variations in the conditions for teachers' professional learning and development: sustaining commitment and effectiveness over a career. *Oxford Review of Education, 33*(4), 423–443. https://doi.org/10.1080/03054980701450746

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Desimone, L. M. (2023). Rethinking teacher PD: A focus on how to improve student learning. *Professional Development in Education, 49(*1), 1–3. https://doi.org/10.1080/19415257.2023.2162746

Eraut, M. (2010). Informal learning in the workplace. *Studies in Continuing Education, 26*(2), 247–273. https://doi.org/10.1080/158037042000225245

European Commission. (2012). *Supporting the Teaching Professions for Better Learning Outcomes.* Brussels: European Commission.

Feiman-Nemser, S. (2001). From Preparation to Practice: Designing a Continuum to Strengthen and Sustain Teaching. *Teachers College Record, 103*, 1013–1055. https://doi.org/10.1111/0161-4681.00141

Field, A. (2013). *Discovering statistics using IBM SPSS Statistics* (4th ed.). Sage Publications.

Garrison, D. R. (1997). Self-directed learning: Toward a comprehensive model. *Adult Education Quarterly, 48*(1), 18–33. https://doi.org/10.1177/074171369704800103

Guglielmino, L. M. (1978). Development of the Self-Directed Learning Readiness Scale. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 38*(11-A), 6467.

Guglielmino, L. M. (2008). Why Self-Directed Learning. *International Journal of Self-Directed Learning, 5*, 1–14.

Hargreaves, A. (2005). Educational change takes ages: Life, career, and generational factors in teachers' emotional responses to educational change. *Teaching and Teacher Education, 21*(8), 967–983. https://doi.org/10.1016/j.tate.2005.06.007

Huberman, M. (1993). *The lives of teachers*. Teachers College Press.

Hodkinson, H., & Hodkinson, P. (2005). Improving schoolteachers' workplace learning. *Research Papers in Education, 20*(2), 109–131. https://doi.org/10.1080/02671520500077921

Hosseini, M., & Nimehchisalem, V. (2021). Self-Assessment in English Language Teaching and Learning in the Current Decade (2010-2020): A Systematic Review. *Open Journal of Modern Linguistics*, 11(6), 854. https://doi.org/10.4236/ojml.2021.116066

Kalenda, J., & Kočvarová, I. (2021). Od mimoprofesní seberealizace k nezbytnosti pracovně orientovaného vzdělávání: Proměna motivace k neformálnímu vzdělávání dospělých v ČR. *Sociologický časopis / Czech Sociological Review*, *57*(1), 75-100. https://doi: 10.13060/csr.2021.001

Karimi, F., Karimnia, A., Ashraf, H., & Khodabakhshzadeh, H. (2025). Constructing and validating a professional development model for EFL teachers: Insights from the journal club approach.International Journal of Instruction, 18(3), 485-510. https://doi.org/10.29333/iji.2025.18325a

Knowles, M. (1975). *Self-Directed Learning: A Guide for Learners and Teachers*. Chicago, IL: Follett Publishing Company.

Knowles, M. S. (2005). *The adult learner: The definitive classic in adult education and human resource development* (6th ed.). Elsevier.

Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement, 30*(3), 607-610. https://doi.org/10.1177/001316447003000308

Kyndt, E., Gijbels, D., Grosemans, I., & Donche, V. (2016). Teachers' everyday professional development: Mapping informal learning activities, antecedents, and learning outcomes. *Review of Educational Research, 86*(4), 1111–1150. https://doi.org/10.3102/0034654315627864

Lohman, M. C. (2006). Factors influencing teachers' engagement in informal learning activities. *Journal of Workplace Learning, 18*(3), 141–156. https://doi.org/10.1108/13665620610654577

Nevado-Luna, J. M., Del Valle Díaz, S., Sánchez Sánchez, F., & Rodríguez-Gómez, I. (2025). Key competences that allow excellence in teaching practice. International Journal of Instruction, 18(3), 1-18. https://doi.org/10.29333/iji.2025.1831a

OECD. (2021). *Teachers and Leaders in Vocational Education and Training*. OECD Publishing. https://doi.org/10.1787/59d4fbb1-en

Opfer, V. D., & Pedder, D. (2011). Conceptualizing Teacher Professional Learning. *Review of Educational Research, 81*(3), 376-407. https://doi.org/10.3102/0034654311413609

Osei-Owusu, B. (2022). Impact of Professional Development Programmes on Teachers' Knowledge and Academic Performance of Senior High School Students in Ghana.

European Journal of Education and Pedagogy, 3(2), 60–69. https://doi.org/10.24018/ejedu.2022.3.2.276

Sala, A., Punie, Y., Garkov, V., & Cabrera Giraldez, M. (2020). LifeComp: The European Framework for Personal, Social, and Learning to Learn Key Competence. Publications Office of the European Union. https://publications.jrc.ec.europa.eu/repository/bitstream/JRC120911/lcreport_290620-online.pdf

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social-emotional learning: Theory, research, and practice. *Contemporary Educational Psychology, 60*, 101830. https://doi.org/10.1016/j.cedpsych.2019.101830

Scoupe, R., Delnoij, L., & Beausaert, S. (2024). Reflective practice among pre-service teachers: the role of portfolios. *Educational Research, 66*(4), 429–447. https://doi.org/10.1080/00131881.2024.2412642

Sebotsa, T., de Beer, J., & Kriek, J. (2020). Self-directed learning and teacher professional development: An adapted profile of implementation. *Proceedings of the 8th Teaching & Education Conference* (pp. 1–14). International Institute of Social and Economic Sciences.

Shukri, M. H. A., & Matore, M. E. E. M. (2023). Trends and Factors Affecting Self-Efficacy among Teachers: A Systematic Literature Review. *International Journal of Academic Research in Business and Social Sciences*, 13(2). https://doi.org/10.6007/ijarbss/v13-i2/16148

Smith, B., & Wyness, L. (2024). What makes professional teacher development in universities effective? Lessons from an international systematised review. *Professional Development in Education,* 1. https://doi.org/10.1080/19415257.2024.2386666

Tomšik, R. (2016). Choosing teaching as a career: The Importance of the type of motivation in career choices. *TEM Journal, 5*(3), 396–400.

Van Eekelen, I. M., Boshuizen, H. P. A., & Vermunt, J. D. (2005). Self-regulation in higher education teacher learning. *Higher Education, 50*(3), 447–471. https://doi.org/10.1007/s10734-004-6362-0

Wang, X., Li, Y., Chen, K., & Zheng, Y. (2024). Understanding teacher emotional exhaustion: exploring the role of teaching motivation, perceived autonomy, and teacher–student relationships. *Frontiers in Psychology*, 14. https://doi.org/10.3389/fpsyg.2023.1342598

Wermke, W. (2010). Continuing professional development in context: teachers' continuing professional development culture in Germany and Sweden. *Professional Development in Education,* 37(5), 665–683. https://doi.org/10.1080/19415257.2010.533573

Zimmerman, B. J. (2002). Becoming a Self-Regulated Learner: An Overview. *Theory Into Practice, 41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2