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TEACHERS' FEEDBACK ON THE USE OF SUPPLEMENTARY MATERIALS FOR DEVELOPING STUDENTS' SELF-REGULATED LEARNING AND PROBLEM SOLVING SKILLS

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ABSTRACT

Transversal skills play an important role in the educational process worldwide and have been paid particular attention in the system of education in Latvia with the introduction of the new competence-based curriculum. Self-regulated learning (SRL), critical thinking and problem solving (PS) skills remain among the most crucial skills at all levels of formal and informal education, as well as in lifelong learning. This requires knowledgeable teachers, equipped with methodological support, guidelines and supplementary materials, that would enable them to professionally advance these skills in their students. The purpose of this study is to analyse teachers' feedback on the use of supplementary materials aimed at developing students' PS and SRL skills. The feedback was provided by 57 teachers of Grades 1–6 attending an online teacher professional development (TPD) course on developing students' SRL skills. The paper also presents a comparative analysis between the results of the current study and the results of an earlier piloting of the supplementary materials. The findings show that students frequently lack sufficient metacognitive skills and highlight that teachers consider supplementary materials to be a useful tool for developing these skills, particularly when accompanied by an appropriate TPD course that deepens teachers' knowledge of SRL and enhances their competence in developing students' SRL and PS skills.

Keywords: *teacher professional development, self-regulated learning skills, critical thinking and problem-solving skills, supplementary materials, teacher experience and feedback.*

Introduction

The development of transversal skills has been assigned an important role in the teaching and learning process, and since the introduction of the new competence-based curriculum in Latvia, the advancement of students' problem-solving (PS) and self-regulated learning (SRL) skills has been identified as an important educational goal (Skola2030, 2019a). SRL is defined as the process where individuals set both short-term and long-term objectives for personal growth, implement strategies to achieve these goals, reflecting on their

thoughts and actions, regulate their emotions and behaviour, and learn from their mistakes (Skola2030, 2019b).

SRL learning skills indicate students' ability to manage and self-regulate their cognitive, metacognitive, motivational and behavioural processes (Zimmerman, 1989; 2000) and numerous models of SRL have been developed, consisting of several phases and processes (Greene & Azevedo, 2007; Panadero, 2017). Zimmerman's (2000, 2002) cyclical loop model entails three main phases, such as (a) a forethought phase, encompassing task analysis and self-motivation beliefs, (b) a performance phase, representing the ability of self-control and self-observation, and (c) a self-reflection phase, encompassing self-judgement and self-reaction (Cleary & Zimmerman, 2012; Zimmerman & Moylan, 2009).

Research has confirmed that SRL skills make a significant contribution to students' academic achievement at different levels of education (Abd-El-Fattah, 2010; Gunzenhauser & Saalbach, 2020; Alessandri et al., 2020). Students who have developed SRL skills are able to motivate themselves, plan and evaluate their work (Veenman et al., 2014) and explicit mastery of skills can contribute to their transferability to life situations beyond the classroom. However, in order to successfully integrate the teaching and development of students' SRL skills into the classroom, teachers should be knowledgeable about what this concept entails and also well trained and equipped with the appropriate methods and materials.

This highlights the gap between educational policy objectives and teachers' competence, as educators often lack the necessary knowledge and competence to effectively develop students' SRL skills (Greene, 2021; Dignath & Veenman, 2021; Linde, Sarva, & Daniela, 2022, 2023). Currently, Latvia faces a challenge of ageing of the teaching workforce, with a considerable number of educators having received their formal training several decades ago. Additionally, the teacher shortage encourages requalification and obtaining teacher's qualification in a shorter period of time, leading to a significant presence of individuals with limited pedagogical expertise in schools. As the concept of SRL is relatively new, there is a necessity to bridge this gap and promote teachers' competence in developing students' SRL skills.

Another important transversal skill is problem-solving, which is identified as a process that includes goal-directed and complex cognitive, affective and behavioural operations (Heppner & Krauskopf, 1987; Nezu, 2004), and these operations are used in the PS process as a response to internal and external demands, to adapt and achieve one's goals. There are various theoretical approaches in the research of PS skills in both Education and Psychology fields (Fischer et al., 2012; OECD, 2013), which approach the assessment of PS skills differently. However, most researchers agree that the PS process can be divided into several specific operations, such as exploring the problem (inquiring and understanding it), developing solutions and stating goals, planning, executing the plan, and evaluating the results (reflecting on what was achieved). Various researchers have arrived at conclusions that PS skills are highly related to academic achievements and intelligence (Greiff et al., 2013; Kretzschmar, Hacatrjana, & Rascevska, 2017; Fitzpatrick et al., 2020; Ellis et al., 2021), indicating the crucial role of possessing these skills in the education process.

Based on the definitions of the two concepts, it is apparent that the phases of the PS process overlap with the three phases of SRL. Although the concepts of PS and SRL are frequently studied separately in science, SRL and PS skills are fundamentally linked within the learning process as effective self-regulation enables students to solve problems more efficiently (Van Gog, Hoogerheid, & Van Harsel, 2020). Consequently, it is logical that these skills should be taught concurrently.

The aim of the current study was to analyse teachers' (Grades 1–6) feedback on the use of supplementary materials aimed at developing students' PS and SRL skills, and also to compare the results with the previous study (Hačatrjana & Linde, 2023b) that focused on the use of supplementary materials in secondary (Grades 7–12) school. The main tasks were to (a) analyse teachers' experiences and observations on using supplementary materials in developing students' SRL and PS skills in Grades 1–6, (b) conduct a comparative analysis between the previously carried out research on using supplementary materials in secondary school, and (c) draw conclusions and provide recommendations.

Methodology

The study was conducted throughout the online TPD course that was tailored for in-service teachers of Grades 1–6 to enhance their competence in developing students' SRL skills. Quantitative and qualitative data were obtained by utilising semi-structured questionnaires administered via Google Forms. A mixed-methods research design was employed, as the integration of quantitative and qualitative data enhances the study by providing more comprehensive and detailed answers to the research questions (Creswell, 2021; Dawadi, Shrestha & Giri, 2021; Vebrianto et al., 2020). The quantitative data analysis involved the use of Excel mathematical calculations, whereas content analysis was used for analysing the qualitative data.

Procedure

In the framework of a larger PhD research in Phase 2 an online TPD course was conducted to class teachers of Grades 1–6. The aim of the TPD course was to expand teachers' knowledge on SRL and to advance teachers competence in developing student's SRL skills. The course was advertised through the Latvian Association of Teachers of English and the education authorities of local municipalities and any teacher who was committed to attending all the sessions and completing all the assignments could apply. Teachers could choose to participate in any of the groups depending on their availability (a) on Mondays from 3 pm to 6 pm, (b) on Thursdays from 3 pm to 6 pm or (c) on Saturdays from 9 am to 12 pm.

Structure of the TPD Course

The TPD course was conducted online via Zoom platform from February to June 2023 and the content related to the SRL, such as the phases and subprocesses of SRL, cognition, metacognition, motivation, social emotional learning and behaviour, was divided into

four modules. Therefore, each group met online at each module and at the final meeting at the end of the course. A Participatory Action Research (PAR) approach (Cornish et al., 2023; De Oliveira, 2023; Jacobs, 2016) was used in the design of the course as the 4h-long online sessions involved not only the overlook of the theory on SRL, but also active teachers' participation with constant self-evaluation of their professional activities, that provided a vast background for sharing good practice examples, identifying existing or probable problem situations and encouraged discussions providing suggestions for the probable solutions. At the end of each module teachers set their own goals for applying the acquired knowledge in practice and it was followed by a 3–4-week introduction phase and the results of which were analysed at the beginning of the next online session.

As this TPD course was the second of two consecutive studies conducted as part of a larger PhD research, the results of the previous study were taken into account and, although the participants in the previous study rated the TPD course highly, with an average rating of 8.41 on a 10-point Likert scale, teachers were also asked to submit suggestions for improving the TPD course, one of which was to provide teachers with materials that would help in the process of developing students' SRL skills (Linde, Sarva & Daniela, 2024). Therefore, the participants of the TPD course of Phase 2 were introduced to the set of supplementary materials that could be used for developing students SRL and PS skills and were asked to use them in their work and provide feedback.

Supplementary Materials

In the framework of the research supported by the European Regional Development Fund under the activity "Post-doctoral Research Aid" project No. 1.1.1.2/VIAA/4/20/697, a set of supplementary materials that consists of eight worksheets (WS) and two reminder sheets (RS) was worked out (Hačatrjana & Linde, 2023a) and piloted in 2023 (Hačatrjana & Linde, 2023b). Taking into consideration the results of the piloting, the worksheets were improved and published on the website of the University of Latvia.

The supplementary materials are versatile, allowing them to be used either as ready made materials or adapted to any specific learning contexts, such as the school subject, students' age group and cognitive ability, as well as learning needs and objectives. Although during each online session of the TPD course teachers' attention was drawn to the use of specific WSs or RSs relevant to the topic covered in the module, teachers' professionalism was highly valued as educators were more aware of the needs of their learners. As a result, participants were invited to use any of the WSs or RSs they considered useful for developing students' SRL skills and were asked to provide feedback on three of them.

Sample

74 in-service teachers who were mainly class teachers of Grades 1–6 or at least taught a subject in these grades applied for the TPD course on SRL, 67 started the course (n = 65 female, n = 2 male), 10 teachers quit the course and 57 (n = 57 female, n = 0 male) completed the course. This research will analyse the responses provided by 57 teachers

who completed the course. Participants represent 32 different types of schools from all the regions of Latvia, majority of whom work at a secondary (38.6% (n = 22)) and elementary school (36.8% (n = 21)), 21.1% of teachers (n = 12) work at a primary school and 3.5% (n = 2) at a state gymnasium. The average participants' age is 47 years and the average work experience is 22.7 years.

Code of Ethics

Teachers were informed that during the course they would be active participants of the research and would be asked to provided their observations, opinion and self-evaluation with the help of self-evaluation questionnaires and that the data would be used in an anonymised and summarised format, and teachers expressed their consent by completing the application form. The General Data Protection Regulation and ethical considerations were respected and the study was approved by the Research Ethics Committee of Social Sciences and Humanities of the University of Latvia (January 11, 2023; Nr. 71-46/12).

Data Collection and Analysis

While working on the topics of the four modules of the TPD course on SRL, teachers were provided a link to the set of supplementary materials on developing students' SRL and PS skills and advice was given on a number of ways to use them either as ready-made materials or teachers were encouraged to adapt them to the purpose of the lesson and the needs of the target group. Nevertheless, teachers did not have to follow strict regulations and their professionalism was trusted in choosing and using the most appropriate WSs and RSs in any order.

After using each WS, teachers were asked to complete a provided Google Form and assess the usefulness of the WS/RS used in developing students SRL and PS skills based on a 6-point Likert Scale: 1 (completely disagree), 2 (disagree), 3 (more disagree than agree), 4 (more agree than disagree), 5 (agree) and 6 (completely agree) and at the end of the TPD course were asked to evaluate the overall usefulness of the provided set of supplementary materials in developing students' SRL skills. In addition, teachers were also asked to provide answers to open ended questions analysing the use of the WS/RS and provide their opinion on (a) what was/was not useful in using the WS/RS; (b) their experience and observations about the students' skills in using it; (c) if they adapted the WS/RS and how; and (d) if they had any suggestions for improving it.

Content analysis was used to analyse the qualitative data using an inductive approach, as codes were developed from the data and categorised (Bingham, 2023), following several steps (a) initially, two researchers looked through the data and created the codes which after that were discussed and put into categories (b) after that both researchers started coding and met to refine as two additional categories were added, (c) then the results of the final coding were compared and consensus reached. The iterative process of code review and refinement, without significant disagreement between researchers, helped to ensure that the codes were reflected adequately.

Results

During the TPD course 57 teachers used several WSs and RSs each and provided their feedback. At the final session of the TPD course teachers were also asked to provide an overall assessment of the different aspects of the TPD course. This paper analyses the questions related to the use of the supplementary materials and other aspects of the overall assessment of the TPD course will be analysed in the future articles.

Teachers were asked to express their opinion assessing the statement "The provided WSs and RSs helped in developing students' SRL skills" and had an overall score of 5.16 on a 6-point Likert scale. Majority of the participants very positively evaluated the usefulness of the supplementary materials, as 42.11% of participants (n = 24) completely agree with the statement, 35.09% of participants (n = 20) largely agree, 19.30% of participants more agree than disagree.

However, there were two teachers (3.51%) who "more disagree than agree" on the usefulness of the supplementary materials. Nevertheless, when overlooking those respondents' detailed analysis of the used WSs/RSs, very positive reviews were provided stating that the worksheet was useful, hence, some explanations on the concepts or examples from real life were necessary for the students to help them understand how to complete the worksheet, finally admitting that the worksheet was beneficial as it helped students assess their strengths and weaknesses and helped them learn how to self-evaluate. This suggests that some teachers still need to improve their competence in developing students' SRL skills, as the degree of usefulness of supplementary materials may depend to a large extent not only on the worksheets themselves, but also on the teacher's professionalism in applying them, as some students have weaker metacognitive skills and may need a higher level of scaffolding.

Teachers' observations on the use of supplementary materials

In order to obtain more comprehensive data, teachers were also asked to provide answers to open-ended questions reflecting on the efficiency of the WS/RS, their experience and observations about the students' skills in using them and if they adapted the WS/RS and how. Table 1 represents the results of the qualitative analysis based on teachers' feedback.

Altogether 161 replies were received and most frequently 73.61% (n = 119 times) teachers acknowledged that the set of supplementary materials is a useful tool in organising and self-monitoring the learning process, and additionally some of them can be used as reminder sheets (see Table 1). The maths teacher of Grade 2 explained that WS6 was useful as the questions were organised in a way that it was easy for learners to understand, and the questions helped students start, continue, finish and also analyse the task or work.

Table 1 shows that the next conclusion that teachers mentioned most often (65.84%; n = 106 times) was that the use of WSs facilitated students' thinking and cognitive processes as well as developed the metacognitive skills through task analysis, looking for solutions and self-reflecting. The teacher of Grade 3 while working with WS5 observed that most of the students were really thinking, planning the work they were going to do and considering what the expected outcome would be.

Table 1 Teachers' feedback on the use of supplementary materials

Category	Description of the category	Frequency
A useful tool in the learning process	The supplementary materials are a useful resource for developing students' SRL and PS skills, as the WSs/RSs help students complete long-term/ large-scale projects, by dividing them into steps, or serve as a useful tool in organising the learning process (e.g. as a self-monitoring tool or reminder).	119
Impact on students' cognition and metacognitive skills	The supplementary materials encouraged students to apply thinking and engage in cognitive effort, to analyse the situation, to look for solutions and to self-reflect on ones' work.	106
Teachers' professionalism and role	Teachers' professionalism plays an important role in choosing the most appropriate materials and adapting them to specific needs, students' age group or cognitive level, as well as in guiding and facilitating the learning process.	74
Students' difficulties in using metacognition	Students lack metacognitive skills and the tasks involving metacognition require effort as students are not used to applying metacognition in the learning process	42
Impact on students' attitude towards the task completion	The use of supplementary materials impacted students' attitude towards the task completion as students experienced engagement, responsibility, autonomy, were interested in the task and enjoyed the activities and the learning process.	36
Impact on the learning outcomes and academic achievement	The use of supplementary materials impacted students' learning outcomes and academic achievement.	30
Impact on promoting students' collaboration	The use of supplementary materials fostered collaboration skills such as working in pairs/groups, working together with parents/ teacher or stimulated teacher-students' collaboration.	28
Future applications of the supplementary materials	Teachers plan to use the supplementary materials in the lessons in future and to recommend them to their colleagues.	24

Furthermore, the analysis of the data proves the importance of the teacher's role in the learning process as it was mentioned 74 times or in 45.96% of cases (see Table 1), explaining the significance of teacher's professionalism in choosing the most appropriate materials, adapting them if necessary, and preparing the soil for the development of a specific competence and scaffolding students in the learning process. The Grade 4 teacher used WS9 in a class lesson and concluded that "it was a great demonstration of a step-by-step learning strategy to figure out if a person was ready for the test and it was a great help for the teacher herself in the preparation for the class lesson and in teaching the children to prepare for any kind of work".

However, there were a couple of cases that were indicative of insufficient teachers' expertise, for example, a Grade 2 teacher mentioned that '...WS1 was too complicated for a 2nd grader and it was hard for him to understand what he was supposed to do on this WS', forgetting that it is a teacher's task to adapt the material to the specific audience and facilitate its introduction process, which highlights the necessity of TPD in developing teachers competence (Linde, Sarva & Daniela, 2022).

Furthermore, 26.09 % of teachers (n = 42) observed that students lack metacognitive skills, mentioning that they used the WS several times after every test and with each time it became easier for students to use it, concluding that such worksheets should be used systematically. Another observation was that students had poor organisational skills, as they were not used to planning their daily activities as they were usually organised by their parents, and this was mentioned not only by Grade 2, but also by Grade 4 and even Grade 6 teachers. Additionally, respondents acknowledged that the use of supplementary materials helped students improve these skills and a teacher wrote that RS6 'made students think and gave them the opportunity to slowly move on with problem-solving, rather than staying at the beginning and doing nothing'.

Another important aspect mentioned by the respondents was the impact of the use of the supplementary materials on students' attitude towards work which was pointed out by 22.36% of teachers (n = 36). Teachers observed the increase in motivation, positive attitude, interest and autonomy towards task completion, mentioning that 'students worked with interest, tried to analyse and answer the questions honestly' and concluded that 'they were learning from their mistakes'. A teacher of Latvian of Grade 1 observed that the RS6 was constantly on the wall in the classroom and students worked more autonomously and were less likely to ask the teacher to explain the task.

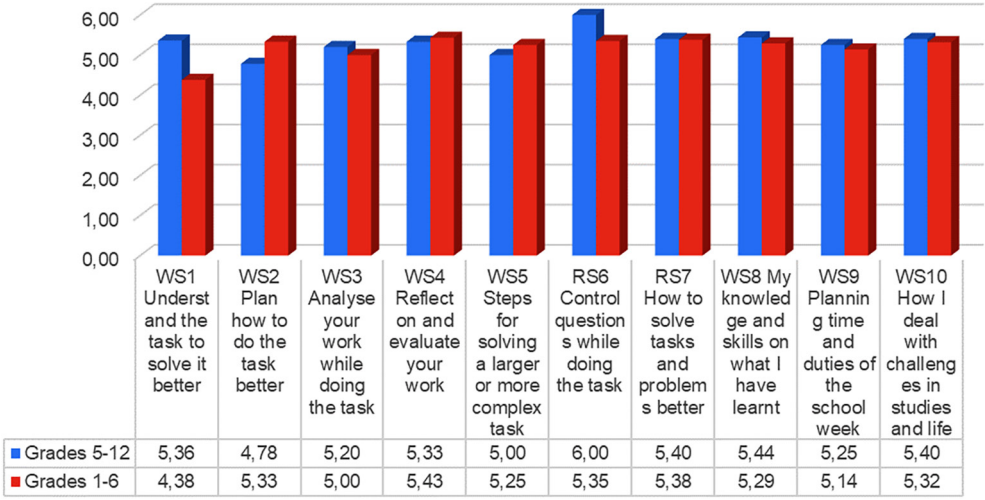
Similarly, 17.39% of teachers (n = 28) pointed out the impact on the promotion of students' collaboration skills through the use of the WSs as they served as a great source for discussions. The teacher of Grade 4 explained that students enjoyed working with WS10 and it gave them the opportunity to discuss and compare their answers with their classmates. The English teacher of Grade 5 highlighted that WS5 provided an opportunity to discuss the potential for seeking assistance from classmates, as initially, students identified only the teacher as a source of help. As a result, this conversation also served as an excellent platform to address social-emotional learning skills.

The last two categories were added after the first coding, as initially they were not envisaged but emerged during the coding process. 30 teachers (18.63%) had observed the impact of the use of WSs on students' learning outcomes and academic achievement and 24 teachers (14.91%) acknowledged that they would apply the WSs in their classrooms in future. These two categories imply that teachers see the importance and usefulness of applying these supplementary materials, as the participants indicated the benefit and necessity of using these materials in the long term.

Comparative analysis on the use of supplementary materials

The comparative analysis compares the results of the current study with those of the previous study conducted in 2023 where teachers were offered to pilot the worked out materials on developing students' PS and SRL skills and although 139 teachers applied to pilot the supplementary materials, only 36 teachers provided feedback (n = 120) on using the WSs and RSs. In a vast majority of cases (n = 110) the worksheets were used in Grades 7–12 and only 3 times in Grade 5 and 7 times in Grade 6, thus Study 1 will be more related to secondary school teachers (Hačatrjana & Linde, 2023b).

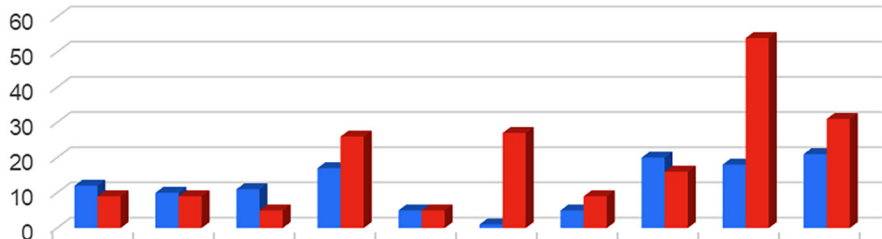
The comparison of the results of Study 1 (Grades 5–12) and Study 2 (Grades 1–6) on the overall usefulness of the WSs/RSs (see Figure 1) shows that in-service teachers highly evaluated the usefulness of supplementary materials in developing students' PS and SRL skills rating them from 4.38 to 6 on a 6-point Likert Scale. WS1 was slightly lower rated (4.38) by the primary school teachers and WS2 (4.78) by secondary school teachers which could be due to the task appropriateness to the student' age characteristics.



	WS1 Understand the task to solve it better	WS2 Plan how to do the task better	WS3 Analyse your work while doing the task	WS4 Reflect on and evaluate your work	WS5 Steps for solving a larger or more complex task	RS6 Control questions while doing the task	RS7 How to solve tasks and problems better	WS8 My knowledge and skills on what I have learnt	WS9 Planning time and duties of the school week	WS10 How I deal with challenges in studies and life
Grades 5-12	5,36	4,78	5,20	5,33	5,00	6,00	5,40	5,44	5,25	5,40
Grades 1-6	4,38	5,33	5,00	5,43	5,25	5,35	5,38	5,29	5,14	5,32

Figure 1 Average evaluations of the overall usefulness of each worksheet (WS)/reminder sheet (RS)

The comparative analysis on the frequency of the use of the supplementary materials (see Figure 2) shows that WS4 (n = 17), WS8 (n = 20), WS9 (n = 18) and WS10 (n = 21) have been used the most frequently by secondary school teachers, indicating that teachers intended to improve several aspects of SRL and PS, such as organisational skills, as well as self-judgement, self-observation and self-analysis which all involve metacognitive skills. RS6 was the least frequently used for the secondary school students (n = 1) as the steps might be too simple for the cognition level of the secondary school students. However, the only teacher who had chosen to use it stated that it was highly useful for the student with learning difficulties.



	WS1 Understand the task to solve it better	WS2 Plan how to do the task better	WS3 Analyse your work while doing the task	WS4 Reflect on and evaluate your work	WS5 Steps for solving a larger or more complex task	RS6 Control questions while doing the task	RS7 How to solve tasks and problems better	WS8 My knowledge and skills on what I have learnt	WS9 Planning time and duties of the school week	WS10 How I deal with challenges in studies and life
Grades 5-12	12	10	11	17	5	1	5	20	18	21
Grades 1-6	9	9	5	26	5	27	9	16	54	31

Figure 2 Frequency of using each worksheet (WS)/reminder sheet (RS)

Figure 2 demonstrates that the complete leader and the most frequently used WS for the primary school students (Grade 1–6) was WS9 (n = 54) which indicates that it is immensely important to develop students' planning and organisational skills at the primary school level. Similarly to Study 1, primary school teachers recognised the necessity to develop students' metacognitive skills with the help of WS4 (n = 26) and WS10 (n = 31). However, the frequency of using RS6 is controversially different as it was the least frequently used for the secondary school students (n = 1), whereas it was highly frequently used for primary school students (n = 27). Majority of teachers have used it as a poster in the classroom, one teacher mentioned putting it also in students' report books and another teacher made even two copies and laminated them as the students suggested that they would like to have one at home as well. This indicates that this RS is more appropriate for learners of younger school age as these skills should already be developed at the primary school level.

Discussion

The high overall evaluation regarding the usefulness of the supplementary materials proves that teachers consider these materials essential for developing students' SRL and PS skills. However, in Study 2 there were two out of 57 teachers who rather disagreed than agreed that the supplementary materials were useful in developing students' SRL and PS skills. This might indicate that teachers still need to advance their awareness of SRL and enhance their competence in developing SRL and PS skills in their students, as the supplementary materials are not a panacea themselves, they should be accompanied with appropriate pedagogical activities in line with the students' cognitive abilities, previous

exposure to the tasks that require metacognition and several other aspects. The findings of this research highlight the teachers' role in the learning process and the importance of teachers' professionalism which is in line with the previous studies (Linde, Sarva & Daniela, 2023).

Although metacognitive skills develop gradually and it might be assumed that older students find it easier to use their metacognitive skills, teachers in both studies were faced with the need to accustom students to in-depth thinking and analysis of their work. Similar to a previous study on the use of supplementary materials with secondary school students (Hačatrjana & Linde, 2023b), teachers in this study observed that students lacked metacognitive skills and were not used to analysing themselves, their thinking and their work processes, which is consistent with previous studies claiming that both primary and secondary school teachers spend insufficient time teaching metacognitive strategies (Dignath & Büttner, 2018), despite the fact that teacher's role in the development of students' metacognitive and SRL skills is considered crucial for success in contemporary education (Greene, 2021).

Teachers also observed that some students lack organisational skills and do not see the point in writing down homework assignments because they can see them in the 'e-class' (an electronic journal in Latvia) or their parents remind them of the assignments. This indicates that these students lack SRL skills and are not able to show their initiative, have not developed self-efficacy and the habit of planning and organising their time and instead rely on their parents or teachers (Zimmerman, 1989).

Another important aspect mentioned by the teachers was that the use of supplementary materials had a positive impact on students' learning outcomes. This observation aligns with prior research indicating that SRL interventions enhance academic achievement and learning outcomes (Cousins, Bol, & Luo, 2022; Dignath & Büttner, 2018). Teachers observed that although students lacked metacognitive skills, the use of supplementary materials encouraged them to develop these skills, to plan and think deeply, to analyse their strengths, weaknesses as well as their performance, and to use RSs as daily reminders of control questions while completing the tasks. Therefore, teachers' professionalism and role is vital and, according to Vosniadou and colleagues (2024), teachers can promote SRL skills in the classroom activities both directly and indirectly.

Finally, 'collaborative sense-making' is an important part of professional development (Ehrenfeld, 2022), which means that it is more efficient when teachers collaboratively discuss and understand new concepts and how to implement them in their lessons. The approach of introducing new supplementary materials as a part of the TPD course should therefore be encouraged, thus providing time and space for in-depth understanding of the materials and their use, as well as providing support and feedback in the use of the materials during the course.

Conclusions

Results of the current study, analysing teachers' feedback on the use of supplementary materials to develop students' SRL and PS skills, and a comparison of these results with the previous research, confirm that teachers consider supplementary materials highly valuable and beneficial for developing students' SRL and PS skills. Therefore, it would be useful to expand and add more additional materials to the set in the future, varying them according to the students' age range and having them in an easily modifiable form, so that teachers can easily adapt them to their needs.

Furthermore, the data indicate that, notwithstanding the highly appreciated usefulness of the materials from the teachers' point of view, the supplementary materials themselves cannot be considered a panacea for the development of students' SRL and PS skills, as these materials are strongly interrelated with the teachers' professionalism and competence in using them. The findings suggest that, it would be advisable to complement the use of the supplementary materials with an appropriate TPD course in order to increase teachers' knowledge of SRL and PS skills and competence in developing these skills in their students. This could be particularly important for in-service teachers who have completed their formal education a long time ago.

What is more, the data show that students lack metacognitive skills and experience difficulties in using them, suggesting that metacognitive skills are not being sufficiently developed in the learning process, which points to the need for appropriate TPD, emphasising two aspects: (a) enhancing teachers' understanding of the concept of SRL and the importance of systematic and long term development of these skills, and (b) improving teachers' competence in developing SRL and PS skills in their students, pointing out the benefits of the use of the supplementary materials.

Finally, further research analysing the development of students' SRL skills after teachers' systematic work on the enhancement of students' SRL skills with the use of additional materials would be useful.

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