Discover Education

RESEARCH Open Access

Developing English language teacher special field proficiencies through lesson study

Duygu İleritürk[1,*] and Remzi Y. Kıncal[2]

This article was produced from the doctoral dissertation called "The development of english language teacher's special field proficiencies via lesson study".

*Correspondence:
Duygu İleritürk
duygu.birbiri@atauni.edu.tr
[1]Department of Educational Sciences, Atatürk University, Erzurum, Turkey
[2]Educational Sciences, Çanakkale 18th March University, Çanakkale, Turkey

Abstract

This study examines the factors affecting the development of specialized proficiencies among English language teachers via a Lesson Study methodology. This action research involved four secondary school English teachers in Turkey. While many studies have focused on general teaching practices, there is a notable gap in research specifically exploring how LS contributes to the development of specialized proficiencies in English language instruction within the Turkish context. This study addresses that gap by offering context-specific insights. The low distribution of eighty percent of the selected class included both students and language teachers who volunteered. The criterion was a class with students of varying achievement levels. So, the study's participants included four female English language teachers from a secondary school, whose native language was Turkish, the students in the class where the research was implemented, an administrator, and a researcher. The students are included in 16 male and 18 female students. The research included observational evaluation criteria, researcher journals, audio recordings, and semi-structured interviews with educators and students to gather qualitative data. The research sought to strengthen teaching methods in planning, language skill development, evaluation, and professional growth through five iterative cycles of planning, action, observation, and reflection. Research demonstrates that collaborative lesson planning, varied and student-centered instructional strategies, and the incorporation of real-world applications markedly improved teacher effectiveness and student involvement. Educators gained advantages from self-evaluation, peer critique, and professional collaboration, resulting in enhanced pedagogical tactics and classroom methodologies. Students exhibited increased enthusiasm and engagement, especially in activities customized to their preferences. Notwithstanding these achievements, we recognized limitations like inadequate planning abilities, dependence on conventional teaching techniques, and a restricted emphasis on emotional learning goals. Rectifying these deficiencies is crucial for ongoing professional development. Thus, this research advances the field by demonstrating how LS can serve as a practical and reflective framework for enhancing both teaching quality and student engagement in language learning. This research highlights the effectiveness of LS as a framework that promotes the growth of both educators and learners. It underscores the significance of peer collaboration, reflective practices, and innovative methodologies in tackling educational difficulties and enhancing professional competencies.

© The Author(s) 2025. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by-nc-nd/4.0/.

Keywords Foreign language education, LS, Professional development, Teacher of English as a foreign language, Teacher proficiency

1 Introduction

Since the early 2000s, the roles and professional competencies of educators have evolved, making professional development crucial. Pre-service and in-service training aim to equip teachers with the skills to meet the changing needs of students and the broader educational landscape. Educators largely rely on collaborative and mentoring-based models for their professional development [24]. Bremner [9] emphasizes that practice-based activities like peer observation and feedback significantly enhance teaching quality by encouraging self-analysis and reflection.

Professional competencies are increasingly viewed as a cornerstone of effective teaching practice in the twenty-first century. These competencies encompass not only subject-matter knowledge but also pedagogical skills, reflective practice, communication abilities, and the capacity to adapt to diverse learner needs [14, 29]. Theoretically, professional competencies reflect the epistemological beliefs and pedagogical orientation of teachers, while practically, they directly influence classroom practices, instructional quality, and ultimately student learning outcomes. Developing these competencies is critical for sustaining educational quality and supporting lifelong learning for both students and teachers.

Lesson Study (LS) offers a model that prioritizes teacher collaboration, learning elements, and teacher practices [31]. In LS, teachers collaboratively plan lessons based on their experiences, incorporate student data, and prepare students for future learning [11]. LS has been widely used in Turkey, where it contributes to teacher professional development and supports the Ministry of Education's focus on student-centered learning [30]. According to Zheng et al. [38], educators are crucial leaders of change and innovation. Despite the numerous frameworks and policies aimed at improving teacher quality, previous research has often failed to explore how these competencies develop within authentic classroom contexts or how teachers perceive and reflect on their own growth [23, 36]. There is a lack of empirical evidence regarding the mechanisms that translate teacher learning into classroom practice—particularly in the field of foreign language education. This gap is especially evident in studies addressing the development of English language teachers' specialized field competencies through collaborative, practice-oriented models such as Lesson Study. This study seeks to fill that void. Studies emphasize the link between teacher competencies and learning outcomes, making it necessary for instructional activities to center on learning objectives [15]. School-based professional development in Turkey, supported by the European Commission since 2002, aims to connect teachers' individual development with local school needs. Despite these efforts, the impact on school cultures and local needs remains limited. In-service training courses or seminars have not fully supported school culture or local requirements, making alternative professional development models that encourage collaboration and mentorship necessary.

To address this, both MoNE and the Higher Education Board in Turkey have introduced various teacher training models. MoNE's school-based professional development paradigm, introduced in 2010, aimed to improve teachers' professional knowledge, skills,

and attitudes [26]. Albion et al. [3] and MoNE [26] found that such practices contribute to the holistic development of schools and human capital. Cansoy and Parlar [10] argue that school-based learning activities, such as teaching and organizational learning, enhance student learning.

In the context of English language teaching, teacher competencies are even more significant due to the communicative and intercultural demands of language instruction. European Commission policies on foreign language education emphasize maintaining high standards, employing innovative teaching methods, and producing skilled language specialists [13, 27]. However, research consistently reports a disconnect between policy intentions and classroom realities, particularly in Turkey, where students often struggle with oral communication skills despite years of formal instruction [12, 22].Baş [7] identifies factors such as the learning environment, negative attitudes, and anxiety as contributors to students' speaking difficulties, especially in foreign languages. Coşkun-Demirpolat [12] found that pre-service English teachers reported not using the target language in daily life, affecting their teaching quality, motivation, and communication skills. Teacher qualifications are essential, but professional development is also needed for enhancing effectiveness. Given this backdrop, Lesson Study presents a promising framework for improving English teachers' competencies in a collaborative, contextualized, and reflective manner. It fosters a professional culture of shared responsibility, critical inquiry, and sustained development aligned with student needs and curriculum goals.

This study explores how LS, a collaborative model, can help teachers reflect on and enhance their practice, improve their professional knowledge, and ultimately improve student learning. Teachers collaboratively plan lessons, reflect on their practices, evaluate their lessons, and incorporate peer feedback to improve their teaching. These activities not only foster professional development but also enhance teacher competencies. Collaboration and self-renewal are key to improving student learning outcomes, and alternative methods like LS are believed to contribute to better teacher quality by improving their competencies.

This research suggests that focusing on teacher competencies is essential for addressing challenges in English language learning. In-service teachers view their development in terms of specialized field competencies as crucial for continuous professional growth. MoNE emphasizes communication skills, collaboration, learner autonomy, task-based activities, and authentic assessment in the English language curriculum. MoNE's development of teacher proficiencies highlights the connection between teacher quality and instructional effectiveness [22].

MoNE has identified five core competencies for English language teachers:

1. Plan and organize the teaching process.
2. Improve language skills.
3. Observe and assess language progress.
4. Collaborate with school, family, and society.
5. Facilitate professional development in English language teaching.

This study focuses on four competencies, excluding "collaborating with school, family, and society" due to time constraints. The study investigates the competency levels of

English language teachers as foreign language learners and examines their actions and attitudes toward:

1. Planning and organizing the teaching process.
2. Improving language skills.
3. Observing and assessing language progress.
4. Enabling professional development in English language teaching.

By doing so, the research addresses an important gap in the literature by examining how a Lesson Study model can support the development of these field-specific competencies in English language teachers, particularly within the Turkish context. The research questions include:

1. What factors are effective in improving English language teachers' specialized field competencies?
2. What factors hinder the improvement of English language teachers' specialized field competencies?

2 Method

2.1 Research design

This study follows the principles of LS, which, like action research, involves a cyclical process of planning, acting, observing, and reflecting. While the steps of LS share similarities with the stages of action research, it is important to note that LS is specifically designed for improving teaching practices through collaborative, iterative cycles among teachers. According to Dudley [17], LS is a specialized form of action research aimed at enhancing teachers' practical knowledge in a classroom setting.

The purpose of this study is to investigate the factors influencing the development of special field proficiency among English language teachers through a LS process. In this context, the study is structured to follow the key elements of the LS model, which centers around teachers working together to plan, observe, and reflect on a lesson to improve their teaching practice.

2.2 Process

The study was designed to follow the phases of LS, with a particular focus on collaboration and reflection in each phase. The research process was structured as follows:

- Initial Phase: A secondary school with low academic achievement, as identified by the Directorate of National Education, was chosen for the study. A preliminary interview was conducted with the English language teachers at this school to explain the research procedure and obtain their consent for participation. Teachers agreed to participate after expressing their willingness and signing the consent form.
- Pre-Observation Phase (Three Weeks): In the first phase of the LS, a three-week pre-observation period was used to observe the teaching methods, routine practices, and classroom dynamics of the practicum teacher. The goal of this phase was to gather information on the teacher's instructional techniques, language use, and assessment methods in order to understand the existing teaching context before implementing any interventions. Observations focused on identifying the strengths and areas for improvement in the teaching methodologies used by the practicum teacher.

- Planning Cycle: The LS process began with the planning phase, where the teachers collaboratively designed a lesson. During this phase, the context and objectives of the lesson were carefully discussed, and planning meetings were held to ensure that the lesson design reflected the collective knowledge and input of all participating teachers. The planning phase aimed at creating a lesson that would address the needs of students, drawing from the curriculum and the teachers' professional experiences.
- Action Cycles (Implementation Phase): The study included five action cycles. Each cycle followed the structure of planning, teaching, observing, and reflecting. In the action phase, the teachers implemented the research lesson based on the collaboratively designed plan. Each implementation was carefully observed by the participating teachers, with a focus on how the lesson plan unfolded in the classroom and how students responded to it.
- Observation Phase: During the observation phase, the teachers observed the lesson being taught and identified any challenges or issues that arose. These observations were critical in determining how well the lesson plan worked in practice and what adjustments were needed for future cycles. In the observation phase, attention was given not only to teaching methods but also to student reactions, engagement, and learning outcomes. This phase provided valuable insights into areas for refinement in the lesson.
- Reflection Phase: The final phase of LS is reflection, where the teachers, based on their observations and the feedback gathered, reflected on the research lesson and evaluated its effectiveness. The lessons learned were used to revise the lesson plan and implement improvements in subsequent cycles. The reflection also involved developing proposals for solutions to address any practical issues that emerged during the observation phase.

Each lesson cycle focused on specific elements of the seventh grade English curriculum, ensuring that the activities covered were aligned with curriculum goals. After the research lessons were conducted, teachers met to reflect on the lessons, make necessary adjustments, and prepare for the next cycle. Throughout the process, the participating English language teachers evaluated the effectiveness of the lesson plans after each cycle, identifying areas that needed improvement. They collaboratively refined the lesson content and teaching strategies to better meet the needs of their students.

2.3 Participants

The Ministry of National Education's rankings of school success indicated that the secondary school where the investigation was to take place had low achievement levels. The school, with a student population of 750, was extremely congested, yet comprised students with low and moderate socioeconomic status in relation to the Turkish minimum wage.

Using the criterion sampling procedure, the participants was determined based on the following criteria: The low distribution of eighty percent of the selected class included both students and language teachers who volunteered. The criterion was a class with students of varying achievement levels because language teachers are qualified to instruct students of varying achievement levels.

Consequently, we used the criterion sampling method to select students and teachers within the study's scope, considering the achievement level of schools and students, as

determined by purposive sample methods. As a result, the study's participants included four female English language teachers from a secondary school, whose native language was Turkish, the students in the class where the research was implemented, an administrator, and a researcher.

Due to the voluntary nature of the study, four of the school's five English language teachers were women. The other research study group language teachers did not deliver any lectures in the practice class. There were 16 male and 18 female students in the cohort. According to the interview and observation data, 15 of the participant students expressed that they enjoyed the lessons and had positive attitudes towards the English language lesson, whereas 16 students had negative attitudes towards the lesson. According to the European language portfolio, the achievement rate of English course participants was at the A1 level. We observed that the student participants were more active in reading comprehension and listening skills, but more inert in writing and speaking skills, across the four language skills.

Table 1 displays the gender, age, postgraduate education, professional experience, and length of employment at the same school for the study group's teachers. According to MoNE, language teachers are required to teach at least 15 and no more than 30 lessons per week. Therefore, Table 1 also displays the weekly lesson hours of language teachers. The symbols HT, ST, LT, and ET in Table 1 represent the teachers who participated in the study.

2.4 Data collection instruments

The study utilized both qualitative data collection instruments. The specific field proficiencies developed by MoNE [26] were used as observation assessment criteria to determine teachers' development. Additionally, unstructured researcher diaries, a semi-structured interview form, and an audio recording were used to implement and assess the LS process.

2.5 Data analysis

The data analysis in this study was structured in alignment with the cyclical process of LS, which includes the phases of planning, acting, observing, and reflecting. The primary goal was to examine how each phase contributed to the development of teachers' practices and student learning over the course of the study's iterations.

- Data Collection: Throughout the 18-week study, all research data were collected, including audio recordings of lessons, observational notes, and interviews with both teachers and students. Initially, video recordings were planned; however, audio recordings were used to create a less intrusive environment, allowing both students

Table 1 The demographical features of the participants

Participants	HT	ST	LT	ET
Gender	F	F	F	F
Age	39	30	32	32
Postgraduate education	None	None	None	None
Professional experience	13 years	5 years	9 years	7 years
Working period in the same school	2 years	1 month	2 months	3.5 years
Weekly lesson hour	25 h	19 h	21 h	24 h

and teachers to express themselves naturally without the awareness of being filmed. The total duration of the audio recordings was 1046 min across the study period.

- Integration with the Teaching–Learning Process: The data collection was embedded directly into the ongoing teaching–learning process. The researcher observed all English language lessons during the study and documented interactions relevant to the LS phases. This approach ensured that the data collected reflected authentic classroom practices and captured real-time teaching dynamics.
- Transcription and Coding: The researcher transcribed all audio recordings, researcher diaries, and interview data verbatim, ensuring no information was altered or omitted. A total of 109 pages of transcription were produced. Each transcription was reviewed thoroughly to identify patterns and recurring themes related to the LS process. The interview and observation data were systematically coded based on the research questions. The researcher maintained a scoreboard to track the progression of themes. Similar codes were grouped under broader categories, allowing the researcher to form specific themes related to key aspects of the LS process, such as teacher collaboration, lesson effectiveness, and student engagement.
- Collaboration in Coding: To ensure the accuracy and consistency of the analysis, the researcher and an expert in curriculum and instruction independently coded the interview and observation data. Both the researcher and the expert reviewed the data forms and applied a consistent set of coding keys. This process helped ensure that all relevant data was categorized under the appropriate themes and that the coding aligned with the objectives of the LS.
- Reliability measurement: To assess the consistency of the coding process, the researcher and the expert compared their codifications. Discrepancies were discussed and resolved to maintain consistency. The inter-coder reliability was calculated using the Miles and Huberman formula, yielding a reliability coefficient of 0.92, indicating a high level of agreement and ensuring the trustworthiness of the data coding.
- Generating and Interpreting Results: Once the data was coded and reliability was confirmed, the next step was to interpret the findings within the context of the research questions. The results were generated by linking the themes and categories derived from the data to the research questions. Direct quotes from teachers and students were included in the analysis to enhance transparency and validity, offering authentic evidence of the LS process and its outcomes. The interpretation of the results focused on the factors influencing the development of teachers' field proficiency and how the LS process impacted both teaching practices and student learning outcomes.

2.5.1 Data analysis aligned with LS

1. Collaborative Reflection: Data analysis within the LS framework emphasizes collective reflections of teachers throughout the cycles. Teachers reflected not only on their own teaching but also on their colleagues' practices, ensuring that the analysis was collaborative in nature.
2. Focus on Student Learning: Each cycle's observations and reflections also considered how students engaged with the lesson, helping to understand the impact of teaching practices on student learning and facilitating adjustments in future cycles.

3. Iterative Improvement: Similar to the LS approach, the data analysis process was iterative, with insights from each cycle informing subsequent phases. This iterative approach ensured that teaching practices evolved based on real-time observations and reflections.
4. Qualitative Data: Given the primarily qualitative nature of the data, the focus was on interpreting the meaning of participants' responses and classroom interactions. The iterative and collaborative structure of LS demanded a nuanced analysis to capture the complex dynamics between teachers, students, and lesson content.

2.6 Validity and reliability

To enhance internal validity (credibility), the researcher spent adequate time in the research environment to ensure a thorough understanding of the requirements. External validity (transferability) was addressed by providing a detailed explanation of the research environment, participants, data collection instruments, validity and reliability of instruments, and data analysis methods. For internal reliability (consistency), a variety of data collection tools were used, and expert opinions were regularly sought during the data analysis process. The results were further enriched with direct quotations from participants to increase the trustworthiness of the findings. To ensure external reliability (confirmability), the research process, data collection methods, participant details, data analysis, and results were thoroughly documented, providing transparency throughout the study.

2.7 Ethical considerations

This study adhered to ethical research standards by obtaining informed consent from all participants, including teachers, students, and school administrators. Participation was voluntary, and individuals were informed of their right to withdraw at any stage without penalty. Confidentiality and anonymity were ensured through the use of pseudonyms and secure data storage. The research protocol was approved by the relevant ethics committee prior to data collection.

3 Results

Five action cycles were performed to analyze the research problems, and the results of these cycles are presented in Table 2. Table 2 shows the participants of action cycles studied in the research.

3.1 The first cycle: determining the aims

Preparation, implementation, and reflection steps were included in the first cycle. The focus of the cycle is to recognize participatory teachers and students. In this manner, teachers' teaching styles and professional experiences were viewed in the pre-interview. Table 3 shows the themes, categories, and codes about teachers' pre-views.

We obtained general information about the teachers' reasons for choosing their profession, their sources of motivation, their professional and individual development practices, the in-service training they attended and planned to participate in, and identified the participating teachers based on the interviews conducted with them prior to the study. The process of establishing goals and implementing them within the first cycle has been successful in this regard. So, it is seen that the participating teachers decided

Table 2 Research action cycles

		LS process			Data collection process	
			Meeting	Duration	Instruments	Focus
1st cycle: determining the aims	1st week	Preparation	Introduction meeting	40'	Interview form of students and teachers	Recognizing
	1st week 2nd week	Implementation and reflection	Pre- observation process	320'	Observation form	Identifying the aims Identifying the actions
2nd cycle: LS process of 1st unit	4th week	Preparing of research lesson and planning	Preparation U1	34'	Document analysis ınterview	Designing the unit plans Identifying the context Identifying the actions Determining the achievement
	5th week	Implementing research lesson	Implementation U1	160'	Observation	Action
	6th week	Reflecting	Reflection U1	40'	Interview Document analysis Observation	Assessment Reasoning

*U1 for unit 1, U2 for unit 2, U3 for unit 3 ve U4 for unit 4 are used

on their profession in line with their preferences, and they wanted to become English language teachers after being influenced by their former teachers. Additionally, they state that the curriculum, the school climate they work in, and the weekly course hours they conduct are important factors in ensuring the continuity of their professional motivation.

Reflection studies revealed that while teachers acknowledged sharing certain teaching levels and professional achievements with their groups, the observations led to the development of solutions to address their dissatisfaction with observing each other's teaching processes and viewing the classroom as a private space for their teaching. The teachers generally receive in-service training that aligns with their areas of interest or meets MoNE requirements. The interviews indicate that the teaching processes do not incorporate the in-service training, nor do they utilize it after a specific period. Teachers assert that the MoNE's prepared and conducted in-service training is inadequate for their field, and the educators lack expertise in the relevant subject. They emphasize the need to support in-service training abroad, especially for their fields. They state that we should increase and diversify in-service training in this manner.

3.2 The 2nd cycle: organizing LS for 1st unit

The unit activities in the English textbook were planned to be implemented by the practice teacher and the expert in the first research lesson, and accordingly, activity plans were carried out to eliminate the problems and missing points identified by the classroom observers. We focused the activities on the areas where the practice teacher faced the most challenges in the practice class. We observed that the students gained more individual knowledge during the implementation of the activities in the research lessons, but the practice teacher did not receive sufficient time to finish them. The teachers convened short-term meetings, lasting approximately 5 min, to discuss potential solutions to this issue. Following the discussion, they decided to plan activities from various fields, primarily to reinforce the unit's content in the lesson, increase focus, and enhance the students' enjoyment. As a result, in the lesson improvement step, they concentrated on

Table 3 Teachers' pre-views about their teaching and professional experiences

Themes	Categories	Codes
Professional motivation	Motivation instruments	Secondary school teacher
		School principals
		The most successful lesson
		Syllabus
		Classroom size
The school climate	The characteristics of student, parent and principals	Passive students
		Dominated principles
		İncurious student
		Curious student
		Positive principals
		Curious parent
		Incurious parent
	Relationships of colleagues	Sharing
	Values and weekly course hours	Not doing
		A lot of course hours
		Average course hours
	Human affairs	Adaptation
		Communication with fellow
Curriculum	Objectives	Uninterested in objectives
		A lot of objectives
	Features of the context	Intensive context
		Variability of the activities
	Evaluation and assessment	Role-playing
		Speaking
		Listening
		Project
		Filling the gaps
		True–false
		Multiple choice
		Vocabulary diary
	Teaching methods	The methods including four language skills
		Grammar translation method
		Individual authentic method
	Mastery of curriculum and applicability	Difficulty in practice
		Difference between practice and expectation
		Practicable
In-service experience	Teaching strategy	Routinized course
		Question–answer technique
		Expository teaching
		Discovery teaching
		Teacher centered
	Teaching methods	Translation method
	Planning	No planning
		Annual plan
	Evaluation and assessment	Test
		Quiz
		Oral exam
		Game
		Project

Table 3 (continued)

Themes	Categories	Codes
Student's performance	Interests in the course of students	Curious
		Incurious
		Hard-working
	The importance of the lesson according to parents	Prejudiced
		Curious parent
		No information
		Troubled parent
	Studying habits of the students	Systematic homework
		Oral exam score
		Additional resources
		None
Professional development	Participation in professional training	Following
		Participating
		Not participating
	Need for professional training	Be needed
		Speaking skill
		Education in at foreign country
	Supporting participation in professional training	To be increased
		Local training
		Training for each field
		An expert educator

the parts where both the students and the teacher had difficulties learning and teaching. However, observations reveal that all teachers struggle with teaching vocabulary. Thus, we can conclude that the planning and implementation actions of the second cycle have been successful.

The teachers evaluated the introduction and development stages of the lesson, as well as the overall performance in the first research lesson reflection step. The teachers preferred to evaluate the research lessons of the first unit as a whole, not separately. Accordingly, the observers tried to find solutions based on the problems experienced in the classroom. When we asked teachers to evaluate the activities they implemented in the curriculum in terms of learning themes (student-centered learning and meaningful learning), they admitted to using teacher-centered routine teaching practices, which led to their failure in understanding learning concepts. During the reflection process of the first unit's research lessons, we observed that the teachers attributed their failures primarily to unsuccessful teaching situations. The teachers attributed the majority of their research lesson failures to controllable factors. Moreover, teachers recommended using methods that engage students in the lesson to prevent classroom management issues, and adjusting the planning time to align with the activity's content. Additionally, they should engage in activities that enhance the motivation of both the students and the teacher.

3.3 The 3rd cycle: organizing LS for 2nd unit

In the research lessons regarding the second unit, the unit activities in the English textbook were planned to be implemented by the teachers. However, they came to the conclusion that instructing students to use a dictionary would engage them in a classroom activity and simultaneously stimulate their word learning. Therefore, they planned and systematized teamwork to support peer learning and enable all students to participate

in the learning and teaching process. So, the action was carried out successfully. During the reflection process of the second unit's research lessons, the teachers evaluated the introduction and development stages of the lesson. We observed that teachers more closely linked their implemented activities to the program's learning themes of "student-centered learning and meaningful learning," and they incorporated more activities that boosted students' in-class motivation. Therefore, while they continued their routine teaching practices, they demonstrated a greater focus on student-centered learning. We concluded that the participant-observers in the research lessons achieved success in this regard.

3.4 The 4th cycle: organizing LS for 3rd unit

The teachers conducted comprehensive evaluations of the introduction and development stages of the research lessons in the third unit. During the meeting, we discussed and found solutions to problems related to the preparation and development stages of the lessons.

Therefore, we concluded that all participating teachers in the study successfully resolved the actions in the fourth cycle, particularly the planning of activities, time management, and classroom management problems that arose during activity implementation. However, we observed that teachers concentrated on end-unit activities to ensure students achieved their goals and reinforced the objectives during the reflection processes. Additionally, they utilized attention-grabbing online games to enhance student participation in the lesson, and subsequently, they concentrated on activities that facilitated the use of classroom language. We observed that students allocated more time to activities that boosted their motivation in class and captured their interest. Therefore, we observed an increase in the focus on student-centered learning, despite the continuation of routine teaching practices.

Based on the third meeting, the participant observers concluded that the teachers were successful in developing solutions for the problems encountered in the research lessons they conducted. Another outcome of the reflection studies revealed that the students struggled to acquire speaking skills, and the teachers did not allocate much time to activities aimed at enhancing these skills.

3.5 The 5th cycle: organizing LS for 4th unit

In the fifth cycle, the emphasis was on performing group work to support peer learning. It was stated that group work was not actively used by any teacher during their professional life due to the large number of classes, the inability to fully understand group work assignments, and the lack of time. It can be said that the actions planned in the fifth cycle have been carried out successfully.

Consequently, solutions and plans were developed by the observers during the reflection processes for the problems that arose in the classroom. When the teachers evaluated the activities they implemented in terms of learning themes (meaningful learning and student-centered learning) in the curriculum, they stated that they were far from teacher-centered routine learning practices, and thus they were successful in terms of learning themes.

According to the observations made in the research lessons, it was observed that the motivation of both the teacher and the students increased when the students were

Table 4 The results about preventive and effective factors in terms of improving English language teachers' special field proficiencies

Themes	Categories	Codes
Planning and organizing english language teaching process	Diversity in methods	Group work
		Scrabble
		Project
		Smartboard
		Puzzle
		Fill in the blanks
	Organizing suitable learning environment	Peer learning
		Real-life situtians
	Improving teaching sections	Introduction
		Be prepared
		Speaking in english
		Activities including in grammar
	Diversity in technological resources	Colourful striking materials
		Watching video
		Listening to music
Improving language skills	Student motivation	Games
		Vocabulary games
		Teamwork
	Usability of foreign language	Active learning
		Be careful
	Focus of the student	Participation
	Different teaching methods	Game
		Teamwork
Observing and assessing foreign language improvement,	The method of assessment	Group activities
		Peer learning
		Listening
		Translation
		Writing
Enabling Professional development in english language teaching	Individual foreign language improvement	Listening in english
		Watching movies
	Reflection of the views	Interviews
		Meetings
		Be observed
		Brainstorming

involved in the learning process. So, it was determined that the students participated more in the lesson. Moreover, it was observed that teachers' motivation to learn and teach was high. Accordingly, the teachers involved in the LS process stated that it could be tried on topics suitable for group work and that it could support the learning processes of the students. Also, it was revealed that the activities developed for the students also supported the teachers in terms of their professional and personal learning.

3.6 The results about effective and preventive factors in terms of improving English language teachers' special field proficiencies

Table 4 presents the opinions of teachers regarding the organization and implementation of English language teaching processes within the scope of the research. The table summarizes the various strategies and approaches adopted by the teachers, particularly highlighting their efforts to incorporate innovative teaching methods and create suitable learning environments. The following interpretation provides further insight into the

teachers' perspectives and practices as reflected in the data. The themes and categories about the effective and preventive factors based on the knowledge and experience of the teachers during the research are presented in detail in Table 4.

According to the views of the teachers, it can be stated that the teachers included teaching methods outside of their routines in the research. Another view expressed by teachers about the organization of English language teaching processes was to ensure that appropriate learning environments were organized to activate the teaching of the research. So, it can be said that the teachers studied to improve this part with the practice teacher. The HT's view on this is as follows:

> *"As a result, I attempted to do the same thing not only in the practice class but also in other classes. As a result, I made more effort because I felt I had to be constantly prepared for the lesson. For instance, in the introduction, I was skipping the introduction part, but with this model, I began to focus on the part I was missing a little more. I began to speak more English in lessons." HT*

According to the views of teachers after the research, the use of the smart board encouraged students to learn and made teaching more effective by enhancing the content presented on the smart board.

When the contribution of the research model in terms of developing students' language skills was examined, they all agreed that all of the teachers had an active process with the practice teacher, especially given the diversification of the teaching methods used routinely, the focus on learning of the students, their motivation to increase, and the teachers' focus on different language skills. Moreover, it was stated that trying to make the students more active by trying to realize all the objectives made their motivation increase. Therefore, they stated that students showed improvement with a focus on teaching. Another positive opinion expressed by the teachers after research was that they focused more on the correct and understandable use of the language, along with the diversification of the materials used in the teaching process. After the research, the majority of the teachers stated that different teaching methods were used and that it was reflected in the measurement and evaluation dimensions. On the other hand, they emphasized that it helped students focus on different language skills through the use of different teaching methods in the teaching process.

> *"...Children enjoy visual materials, games, fill-in-the-blank, and puzzle activities. They are very enthusiastic with word and picture matching, and I found that these activities were more instructive for my class." HT*

It is stated that routine activities were especially included in terms of measurement and evaluation. Additionally, during the LS, the practice teacher stated that she included methods for measuring different language skills in her routine assessment and evaluation. While the teachers stated that the lesson research model was especially beneficial in terms of reflecting different ideas about different teaching practices, they also stated that it could be enriched by using it in other lessons with different groups. Additionally, the LS model enabled English teachers to reach resources that would support their individual language development by avoiding routine practices while preparing lesson plans for students. All of the teachers stated that the research practices were very effective in exchanging ideas about teaching with the other group teachers and were usable for

other fields as well. It was stated that the discussions held after the events were especially functional in this process. Also, teachers were of the opinion that the model was more functional, especially in terms of its practitioner.

3.7 Results about student views on effective and preventive factors

The students have a positive attitude toward the English lesson. Specifically, they state that they enjoy the lesson and that it has been more enjoyable than in the past, thereby increasing their motivation. It can be concluded that the students have been generally satisfied with the lesson and that diversifying the activities performed in the lesson and focusing on the deficiencies of the studens will increase their satisfaction.

According to the students' opinions, the activities conducted by the practice teacher are beneficial, but the number of some activities should be increased. On the other hand, some of the techniques employed by the practice teacher (such as using a dictionary) have increased student participation in the lesson.

> *"I was able to attend class because I was looking up most of the words in a dictionary. Before, I didn't participate into the lesson because I was afraidhowever, I did not wish to participate because I did not know the words." S1*
> *"...I liked the English lesson because learning different things made me more motivated." S4*
> *"...English lesson had full of fun and motivating so I liked it more than the others. "S6*

4 Discussion

The study was implemented by participating language teachers in terms of lesson planning, implementation, and reflection. As a result, teachers identified the issues they encountered during research courses and investigated how to address them. The first cycle's actions to determine the objectives were effective in identifying the teaching styles and professional experiences of teachers. Language teachers chose their profession voluntarily, so they could learn from their former language teachers' backgrounds and experiences, and so they could solve problems collaboratively with their colleagues.

The second, third, fourth, and fifth iterations of the study consisted of LS and problem and solution processes pertaining to the units. In these cycles, effective and preventive factors influencing the development of a teacher's special field proficiencies were also identified. The results revealed that collaborative lesson planning and reflective practice facilitated both pedagogical improvement and professional growth. Teachers became more responsive to students' needs and incorporated more meaningful, student-centered activities into their instruction.These findings align with prior studies that emphasize the effectiveness of LS in enhancing instructional strategies and promoting professional learning communities [2, 8, 33]. Similar to Farrow et al. [18] and Baki and Arslan [5], our findings suggest that LS supports not only teacher development but also student engagement and academic performance. Moreover, teachers' reflection meetings and iterative revisions of lesson plans contributed to a culture of shared responsibility, echoing the findings of Wood and Cajkler [37].

According to the results of the observation data, it can be inferred that the English language teacher who implemented the research-based lesson process did not set

objectives for speaking and writing skills, and as a result, students lacked proficiency in these areas. Unexpectedly, despite improvements in classroom strategies, all participating teachers consistently struggled with teaching vocabulary. It is observed that language teachers' anxiety about their own language proficiency, which appears as a factor preventing the success of the actions, prevents objectives and activities, particularly for the development of speaking skills, and thus causes them to incorporate them into their lesson plans. Peer-to-peer learning among teachers has a negative effect, particularly when determining professional requirements and meeting these needs. This contrasts with some studies that reported vocabulary acquisition as a strength in LS cycles [25]. A possible explanation may be related to the limited time allocated for in-class vocabulary instruction or insufficient professional development in this area. Additionally, some teachers were hesitant to abandon traditional teaching methods, suggesting a need for more robust training in innovative pedagogies. According to research on teachers' anxieties, there are numerous forms of anxiety, such as teaching skill anxiety, foreign language learning anxiety, and lesson anxiety [1]. Adıgüzel and Şen [1] concluded that Turkish language teachers were unprepared for their own teaching due to the educational professional concerns they would face in their own field abroad. Due to the predominantly theoretical nature of pre-service training, the first years of a teacher's career are characterized by inexperience. Therefore, the first years of a teacher's career are spent discovering and adapting to their own teaching style [20]. It is stated that their perceptions of their personal competencies are the reason they do not feel prepared for their actions. In this regard, it can be said that the concerns of foreign language teachers regarding the language they will teach are related to their perceptions of their professional competencies.

Kager et al. [21] have stated that they are especially concerned with the development of teachers' critical and collaborative reflection skills. While LS groups are not expected to possess all teaching-related professional skills, they are expected to develop these skills through critical and collaborative reflection in practice [21]. Teachers benefit from professional development because it provides an environment where they can learn what to do in a realistic classroom setting. Thus, teachers are able to incorporate their professional knowledge into their instruction [28, 32]. In this regard, it can be said that the LS process increases teachers' professional motivation by boosting their self-confidence in their professional proficiency and by encouraging them to work collaboratively to determine where their professional proficiency is deficient.

Inadequate preparation for lesson planning is one of the preventing factors. In addition, it is evident that language teachers lacked adequate knowledge of planning, and they provided inconsistent and unique suggestions for the relational distinction between purpose and context in the reflection steps. Güner and Akyüz [19] found results similar to the investigation.

According to Dudley [16], modifying teachers' knowledge about their own teaching in teacher training or in-service training, transforming it into research-based knowledge, and utilizing this knowledge, particularly in lesson planning, is highly dependent on prior knowledge. Therefore, it could be said that teachers have neglected their own teaching and have emphasized inorganic and activity-based teaching processes rather than planning lessons based on the objectives and requirements of the students. The constructivist theory employed in the curriculum and teaching process should be reflected

in the lesson plans during the lesson's planning phase. A well-designed and implemented constructivist lecture generates numerous opportunities for learning. Constructivist practice is seen as misusing constructivist principles [34]. Therefore, it is essential that professional development activities highlight the characteristics of constructivist lesson planning. Professional learning communities provide numerous opportunities for the professional development of educators. LS contributes to the development of pre-service teachers' and teachers' professional competencies [6]. It can be said that the process of developing and rearranging plans to be implemented by language teachers, particularly in professional training groups, enhances their planning abilities. Nevertheless, according to the teachers' perspectives, it can be concluded that the research activities conducted to diversify the teaching and increase participation during lesson planning also contribute to the teachers' individual professional development.

In the fourth and fifth cycles, teachers have not devised activities with affective objectives in mind, focusing instead on cognitive objectives. It has been observed, however, that they struggle with the warm-up and motivation stages, particularly in the lesson's introduction. This has been an impediment to the planning and implementation processes.

According to the interview data of the students, which was used to determine the students' emotional thoughts about their own learning after the actions, it was determined that the students reported that teaching was more enjoyable after the research process; therefore, they enjoyed the lesson more and their motivation to learn increased.

On the basis of the results of the reflection stages, it was determined that teachers were more effective when incorporating online activities in terms of students' use of language learning strategies and that students participated more actively in the lessons. Therefore, it can be concluded that language teachers have improved the most in the areas of fostering language skills in students and monitoring and assessing their language development.

Almajed et al. [4] stated that each person has unique methods of comprehending, reading, and writing, as well as learning from themselves and others, and that there are seven key factors that facilitate and enhance student learning. Consequently, the following elements are required for meaningful learning: group organization, learning planning, accountability, a comfortable working environment, and teacher support. In accordance with these factors, the action cycles conducted for student development reveal that learning environments must be conducive to cooperative learning so that students can develop study habits and assess their own learning. In addition, it is believed that the manner in which students work in groups influences how they define their own learning styles and manage and monitor their own learning processes. In order for students to develop the habit of studying, language teachers must provide more conducive learning environments and foster collaboration, particularly in classes where communication skills such as foreign languages are actively employed.

The second, third, fourth, and fifth cycles were successful in enhancing the language abilities of students. Nonetheless, it was determined that all of the participating teachers had an active process together with the practice teacher in the reflection steps, and thus the diversification of the routinely used teaching methods, the students' focus on learning, the increase in their motivation, and the teachers' focus on different language skills were effective success factors. It has been determined that the active participation of

students increases and that they are able to adapt learning to real-world situations, particularly with the implementation of peer-learning-supporting teaching practices such as group work. In addition, the research indicates that teachers can have more effective professional experiences by modifying their individual work practices, and the importance of continuous professional development is emphasized. Furthermore, while teachers reported increased collaboration and motivation, challenges such as time constraints and insufficient focus on affective learning objectives were noted. These findings indicate that LS, though effective, requires institutional support and structured time allocation to realize its full potential.

5 Conclusion

This study underscores the potential of Lesson Study as a transformative tool in the professional development of English language teachers. Through collaborative lesson planning, reflective observation, and continuous revision, teachers enhanced their planning, instruction, and assessment competencies. These improvements contributed to higher student engagement and increased teacher satisfaction, illustrating the practical impact of LS on both pedagogical practices and classroom dynamics.

One of the key strengths of the LS model lies in its emphasis on collective work and the exchange of ideas among teachers, which helps to embed professional growth into daily teaching routines. During the implementation phase, teachers were able to identify their instructional shortcomings, enabling critical self-evaluation and promoting reflective thinking. Notably, the study revealed that teachers who engaged in LS shared teaching concepts more frequently, strengthening professional cooperation and enabling the adoption of varied instructional methods and techniques. This, in turn, contributed to the success of the actions taken and fostered a more confident and participatory classroom environment for both teachers and students.

Despite its benefits, the study faced certain limitations. It was conducted with a small and homogeneous participant group within a specific educational context, which restricts the generalizability of the findings. Additionally, logistical constraints—such as limited time for LS meetings and dependence on traditional assessment tools—may have influenced the scope and depth of the outcomes.

Theoretically, the findings contribute to the understanding of how collaborative professional development models like LS can enhance specialized competencies in foreign language education. Practically, the study offers insight into how in-service teachers can benefit from structured peer interaction, iterative practice, and feedback-driven reflection. It also highlights that while the development of teachers' special field proficiencies may not always keep pace with their efforts, collaborative engagements and shared teaching ideas do provide meaningful learning opportunities for educators.

Moreover, when teachers collaborate to analyze student work, they reveal both their pedagogical expertise and personal potential for growth [35]. The LS process encourages teachers to consider their own practices from the perspective of their students, thereby fostering deeper self-awareness. This collaborative and student-centered approach is one of the reasons why LS is often favored over other professional development models—particularly due to its adaptability, sustainability, and capacity to foster lasting professional transformation.

For future research, it is recommended to employ longitudinal designs to assess the long-term impact of LS on teaching practices. Studies involving more diverse and larger participant samples across varied educational contexts would offer more robust and generalizable insights. Furthermore, exploring innovative approaches—such as digital or hybrid LS formats—may help to overcome common scheduling and time-related challenges associated with traditional LS implementations.

Author contributions
D.İ. wrote the main manuscript text, and R.K. supervised the manuscript.

Funding
There is no funding institution for this manuscript.

Data availability
The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
This study was conducted in accordance with ethical principles and approved by the Ethics Committee of Ministry of National Education of Turkey. (Approval Number: 36648235-605.01-E.2843065, Date: 08.02.2019). All participants were informed about the purpose and scope of the study, and their voluntary participation was ensured. Written informed consent was obtained from all participants prior to data collection.

Ethical guidelines
All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication
Participants were assured that their data would be used for research and publication purposes. Informed consent for publication was obtained from all individuals involved in the study.

Competing interests
The authors declare no competing interests.

Received: 14 March 2025 / Accepted: 22 July 2025
Published online: 17 October 2025

References

1. Adıgüzel FB, Şen Ü. Türkçe ve Türk kültürü dersi öğretmenlerinin yurt dışı görevlerine ilişkin hazırbulunuşluk durumları (Readiness Levels of Turkish Language and Culture Instructors for International Teaching Duties). Trakya Eğitim Dergisi. 2018;8(4):822–39. https://doi.org/10.24315/trkefd.316571.
2. Akiba M, Wilkinson B. Adopting an international innovation for teachers professional development: state and district approaches to lesson study in Florida. J Teach Educ. 2016;67(1):74–93.
3. Albion PR, Tondeur J, Forkosh-Baruch A, Peeraer J. Teachers' professional development for ICT integration: towards a reciprocal relationship between research and practice. Educ Inf Technol. 2015;20:655–73. https://doi.org/10.1007/s10639-015-9401-9.
4. Almajed A, Skinner v, Peterson R, Winning T. Collaborative learning: students' perspectives on how learning happens. Interdiscip J Problem-Based Learn. 2016;10(2):1–17. https://doi.org/10.7771/1541-5015.1601.
5. Baki M, Arslan S. Ders imecesinin sınıf öğretmeni adaylarının matematik dersini planlama bilgilerine etkisinin incelenmesi (Investigating the Impact of Lesson Study on Pre-Service Primary School Teachers' Knowledge of Mathematics Lesson Planning). Turk J Comput Math Educ. 2015;6(2):209–29.
6. Bakker C, Glopper K, Vries S. Noticing as reasoning in lesson study teams in initial teacher. Teach Teach Educ. 2022;113:1–13. https://doi.org/10.1016/j.tate.2022.103656.
7. Baş G. Öğretmenlerin eğitim felsefesi inançları ile öğretme-öğrenme anlayışları arasındaki ilişki (The Relationship Between Teachers' Educational Philosophy Beliefs and Their Teaching-Learning Approaches). Eğitim ve Bilim. 2015;40(182):111–26. https://doi.org/10.15390/EB.2015.4811.
8. Bjuland R, Mosvold R. Lesson study in teachers education: learning from a challeging case. Teach Teach Educ. 2015;52:83–90.
9. Bremner N. "Belief-changing" teacher education: Mexican English teachers' experiences. MEXTESOL J. 2020;44(1):1–12.
10. Cansoy R, Parlar H. Mesleki öğrenme toplulukları olarak okullar: Okullarda uygulanması ve geliştirilmesi (Schools as Professional Learning Communities: Practices and Development within Schools). Int Periodical Lang, Lit Hist Turk Turk. 2017;12(17):89–112. https://doi.org/10.7827/TurkishStudies.11996.
11. Cheng LP, Yee LP. A Singapore case of lesson study. Math Educ. 2012;21(2):34–57.
12. Coşkun-Demirpolat B. Türkiye'nin yabancı dil öğretimiyle imtihanı, sorunlar ve çözüm önerileri (The exam of Türkiye about foreign language learning, problems and solutions). Siyaset, Ekonomi ve Toplum Araştırmaları Vakfı Yayınları. 2015;131:7–18.

13. Council of Europe. Common European Framework of Reference for Languages: learning, teaching and assessment-Companion volume. 2022. https://rm.coe.int/common-european-framework-of-reference-for-languages-learning-teaching/16809ea0d4
14. Darling-Hammond L, Hyler ME, Gardner M. Effective teacher professional development. Learn Policy Inst. 2020. https://doi.org/10.54300/122.311.
15. Dassah DJ, Yelletuo PP. Impact of national teachers' standards on quality and effective education delivery. Afr J Educ Pract. 2022;8(4):47–62.
16. Dudley P. Teacher learning in lesson study: what interaction-level discourse analysis revealed about how teachers utilised imagination, tacit knowledge of teaching and fresh evidence of pupils learning, to develop practice knowledge and so enhance their pupils' learning. Teach Teach Educ. 2013;34:107–21.
17. Dudley P. Lesson study: a handbook. 2014. https://lessonstudy.co.uk/%20lesson-study-a-handbook/ Accessed on 3rd February, 2022.
18. Farrow J, Kavanagh SS, Samudra P, Dean CP. The promise of the project to student-centered learning: connections between elements, curricular desing, and practices of project based learning. Teach Teach Educ. 2024;152:1–14. https://doi.org/10.1016/j.tate.2024.104776.
19. Güner P, Akyüz D. Öğretmen adaylarının ders imecesi (Lesson Study) kapsamında matematiksel fark etme nitelikleri (Mathematical Noticing Skills of Preservice Teachers in the Context of Lesson Study). Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi. 2017;36(1):47–81. https://doi.org/10.7822/omuefd.327389.
20. Güvendir E. Göreve yeni başlayan İngilizce öğretmenlerinin karşılaştıkları sorunlar (Problems Encountered by Beginning English Teachers in Their Early Teaching Careers). Dumlupınar Üniversitesi Sosyal Bilimler Dergisi. 2017;51:74–94.
21. Kager K, Jurczok A, Bolli S, Vock M. "We were thinking too much like adults": examining the development of teachers' critical and collaborative reflection in Lesson Study discussions. Teach Teach Educ. 2022;113:1–13. https://doi.org/10.1016/j.tate.2022.103683.
22. Kaygısız S, Anagun SS, Karahan E. The predictive relationship between self-efficacy levels of English teachers and language teaching methods. Eurasian J Educ Res. 2018;78:183–202.
23. Karlen Y, Hirt CN, Jud J, Rosenthal A, Eberli TD. Teachers as learners and agents of self-regulated learning: the importance of different teachers competence aspects for promoting metacognition. Teach Teach Educ. 2023;125:1–14. https://doi.org/10.1016/j.tate.2023.104055.
24. Kuter S. İşbirlikli mentorluk penceresinden öğretmen adaylarının ve öğretmenlerin mesleki gelişimi (Professional Development of Preservice Teachers and In-Service Teachers from the Perspective of Collaborative Mentoring). Eğitim ve Bilim. 2016;41(183):129–45.
25. Midgette AJ, Ilten-Gee R, Wong-Powers D, Murata A, Nucci L. Using lesson study in teacher Professional development for domain-based moral education. J Moral Educ. 2018. https://doi.org/10.1080/03057240.2018.1445982.
26. Ministry of National Education (MoNE). İngilizce öğretmeni özel alan yeterlikleri (The proficiencies of English language teachers special fields). 2017. https://oygm.meb.gov.tr/meb_iys_dosyalar/2017_11/06160113_2-YYretmen_Yeterlikleri_KitabY_ingilizce_YYretmeni_Yzel_alan_yeterlikleri_ilkYYretim_parYa_5.pdf
27. Muhamadjonovna SD. The development of sociolinguistic competence of future english language teachers through computer technologies. Eur J Res Reflect Educ Sci. 2020;8(3):147–51.
28. Nami F, Marandi SS, Sotoudehnama E. Call teachers professional growth through lesson study practice: an investigation into EFL teachers' perceptions. Comput Assisst Lang Learn. 2016;29(4):658–82. https://doi.org/10.1080/09588221.2015.1016439.
29. OECD. Teachers and school leaders as lifelong learners: indicators of education systems (vol.II). OECD publishing. 2019. https://www.oecd.org/en/publications/2020/03/talis-2018-results-volume-ii_367e0acb.html
30. Özdemir SM. Implementation of the lesson study as a tool to improve students' learning and professional development of teachers. Participatory Educ Res. 2019;6(1):36–53. https://doi.org/10.17275/per.19.4.6.1.
31. Pang MF, Marton F. Beyond lesson study: comparing two ways of facilitating the grasp of some economic concepts. Instr Sci. 2003;31:175–94.
32. Qin X. Collaborative inquiry in action: a case study of lesson study for intercultural education. Asian-Pac J Second Foreign Lang Educ. 2024;9(66):1–15. https://doi.org/10.1186/s40862-024-00294-w.
33. Schipper T, Goei SL, Vries S, van Veen K. Developing teachers' self-efficacy and adaptive teaching behaviour through lesson study. Int J Educ Res. 2018;88:109–20.
34. Shah KR. Effective constructivist teaching in the classroom. Shanlax Int J Educ. 2019;7(4):1–13. https://doi.org/10.34293/education.v7i4.600.
35. Trapero NP, Gomez AIP. Pedagogical potentialities of lesson study for the reconstruction of teachers' dispositions. Int J Lesson Learn Stud. 2017;6(1):66–79. https://doi.org/10.1108/IJLLS-09-2016-0029.
36. Ventista QM, Brown C. Teachers' professional learning and its impact on students' learning outcomes: Findings from a systematic review. Soc Sci Humanit Open. 2023;8:2–20. https://doi.org/10.1016/j.ssaho.2023.100565.
37. Wood P, Cajkler W. Lesson study: a collaborative approach to scholarship for teaching and learning in higher education. J Furth High Educ. 2018;42(3):313–26. https://doi.org/10.1080/0309877X.2016.1261093.
38. Zheng X, Zhang J, Wang W. Teacher learning as boundary crossing: a case study of master teachers studios in China. Teach Teach. 2019;25(7):837–53. https://doi.org/10.1080/13540602.2019.1673358.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.