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Pre-service teachers' perceptions of teaching trials: Developing pedagogical content knowledge in EFL grammar through university-school collaboration

Abstract

This study explored how 'teaching trials' within initial teacher education (ITE) for English can contribute to the development of pre-service teachers' (PSTs') pedagogical content knowledge (PCK), specifically in the teaching of grammar in English as a foreign language (EFL). The research incorporated self-reporting methods to gather insights from PSTs about their experiences and development through these teaching trials. The research question was: How do PSTs perceive teaching trials within a university-school collaboration as a support for developing their PCK of grammar in English as a foreign language? The trials were conducted by PSTs of English in a local school class in collaboration with their teacher. Employing a case study approach, the study analysed data from a focus group interview with the PSTs and their reflective texts using thematic analysis. Three themes emerged from the data analysis: "Developing knowledge by connecting grammatical topics and practice in a school classroom environment", "Developing knowledge through repeated trials, reflection, and student feedback", and "Changing viewpoints on grammar teaching". The study found that the PSTs viewed the trials as effective in enhancing their PCK of English grammar. This was attributed to the opportunity for PSTs to implement lesson plans in a real classroom setting, refine their teaching strategies through repeated practice, and reflect on their experiences and the students' feedback. Additionally, the trials facilitated a shift in the PSTs' attitudes towards grammar and the teaching of grammar.

Keywords: teaching trials, pedagogical content knowledge, initial teacher education, grammar of English as a foreign language, university-school collaboration

Lærerstudenters oppfatninger av utprøving av undervisningsopplegg: Utvikling av pedagogisk innholdskunnskap i grammatikk i engelsk som fremmedspråk gjennom universitet−skole-samarbeid

Sammendrag

Denne studien undersøkte hvordan utprøving av undervisningsopplegg i grunnskolelærerutdanningen i engelsk kan ha innvirkning på lærerstudenters pedagogiske innholdskunnskap relatert til undervisning av grammatikk i engelsk som fremmedspråk. Studien benyttet selvrapportering som metode for å samle informasjon fra lærerstudentene om deres erfaringer og utvikling gjennom utprøvingene. Forskningsspørsmålet var: Hvordan oppfatter lærerstudenter at utprøving av undervisningsopplegg i et universitetsskolesamarbeid kan støtte utvikling av deres pedagogiske innholdskunnskap i grammatikk i engelsk som fremmedspråk? Utprøvingene foregikk i en lokal skoleklasse i samarbeid med klassens lærer. Studien ble gjennomført som en case-studie hvor tematisk analyse ble brukt til å analysere data fra et fokusgruppeintervju med lærerstudentene og fra refleksjonstekster de skrev. Analysen resulterte i tre temaer: «Utvikling av kunnskap ved å knytte sammen grammatiske temaer og praksis i en skoleklasse», «Utvikling av kunnskap gjennom gjentatte utprøvinger, refleksjon og elevers tilbakemeldinger» og «Endring i syn på grammatikkundervisning». Ifølge lærerstudentene var utprøvingene effektive for å styrke deres pedagogiske innholdskunnskap i engelsk grammatikk. Dette ble begrunnet med muligheten til å prøve undervisningsopplegg i en ekte klassesituasjon, forbedre undervisningsopplegget i gjentatte utprøvinger, og reflektere over egne erfaringer og elevenes tilbakemeldinger. I tillegg bidro utprøvingene til en endring i lærerstudentenes holdninger til grammatikk og undervisning i grammatikk.

Nøkkelord: utprøving av undervisningsopplegg, pedagogisk innholdskunnskap, grunnskolelærerutdanning, grammatikk i engelsk som fremmedspråk, universitet–skole-samarbeid

Introduction

To qualify as English teachers in Norwegian primary and secondary education, pre-service teachers (PSTs) are required to study a variety of sub-areas in the subject. One sub-area is the study of the structure of English, in this case, English grammar. The PSTs are introduced to various approaches to teaching grammar in school as well as topics such as assessment and theories of second language acquisition. The initial teacher education (ITE) curriculum regarding English grammar outlines PSTs' proficiency in explaining the basics of English language by using grammatical terminology and their ability to work independently as well as with others to facilitate students'[1] development and their learning of the language (UiT, 2023).

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[1] The word *students* refers to students in school.

The Norwegian National Curriculum for Primary and Secondary Education (Norwegian Directorate for Education and Training, 2020a) provides teachers with flexibility and autonomy in selecting their teaching methods. Simultaneously, teachers are required to facilitate students' learning through activities that target student competence as described in the national curriculum. Examples of descriptions of competence in English sentence structure are as follows: "The pupil is expected to demonstrate knowledge of word classes and syntax while working on their oral and written texts" and "The pupil is expected to follow rules for spelling, word inflection, syntax and text structure" (Norwegian Directorate for Education and Training, 2020b). These expressions of competence illustrate what is meant by grammatical competence, which refers to the ability to understand and use the grammar rules of a language correctly, in order to communicate coherently and accurately.

The learning aims of both students' and PSTs' curricula thus demonstrate the significance of understanding and having command of the grammar of EFL. Consequently, the ITE for English lays a notable emphasis on grammar. The focus is on developing PSTs' comprehension and acquisition of grammar to enable them to teach grammar effectively. Therefore, university coursework must assist PSTs in developing a strong foundation in English grammar. This includes strengthening their content knowledge as well as their knowledge about grammar instruction, i.e., their pedagogical knowledge. The combination of these two knowledge domains forms pedagogical content knowledge (PCK) (Shulman, 2013). However, for a PST, developing this knowledge should not only be limited to the university setting; it should also evolve through hands-on experience. In the Norwegian context, practical experience is gained during compulsory ITE practicum blocks, which involve all facets of teacher development. Facilitating teaching English grammar during regular practicum in schools has, however, proven challenging for various reasons (Holmbukt et al., 2023), for example, due to schoolteachers' minimal focus on grammar teaching. Consequently, PSTs have missed opportunities to develop their grammar knowledge during practicum. As a solution to this challenge, the author has introduced the concept of 'teaching trials' as part of the university course. A teaching trial is a method for PST learning that includes opportunities to acquire, in this case, grammatical knowledge and instructional techniques outside the ordinary practicum. The trials necessitate collaboration with schools, engaging experts from both universities and schools. This collaboration offers PSTs expert-guided opportunities to practise and refine their teaching skills. The PSTs prepare lesson plans on campus and try them out in the school, subsequently reflecting on their experiences together with the experts. What potentially sets teaching trials apart from more common grammar teaching approaches in schools may be, in some cases, a lack of integration with other ongoing classroom activities, or an insufficient focus on functional grammar instruction. Teaching grammar in isolation can provide a concentrated focus on grammatical structures, which may prove beneficial in

trials designed to enhance PSTs' comprehension of specific topics and methodologies. While the teaching trial is not the sole method used to support PSTs in mastering subject matter and pedagogical methods, it may more closely resemble authentic teaching settings compared to, for example, a simulated classroom where PSTs instruct each other through mini-lessons (Hadjioannou & Hutchinson, 2010; Ismail, 2011; Karlsson, 2020).

The teaching trial may play a crucial role in bridging the familiar gap between theory (the university-based knowledge) and practical teaching experience gained in schools in ITE (Darling-Hammond et al., 2017; Gravett et al., 2019; Holmbukt & Son, 2017, 2020; Zeichner, 2012). However, its primary focus in the current study is to aid PSTs in developing grammar knowledge by offering targeted hands-on teaching opportunities within a school environment, alongside rigorous university coursework. Hence, the following research question was formulated:

> How do PSTs perceive teaching trials within a university-school collaboration as a support for developing their PCK of grammar in English as a foreign language?
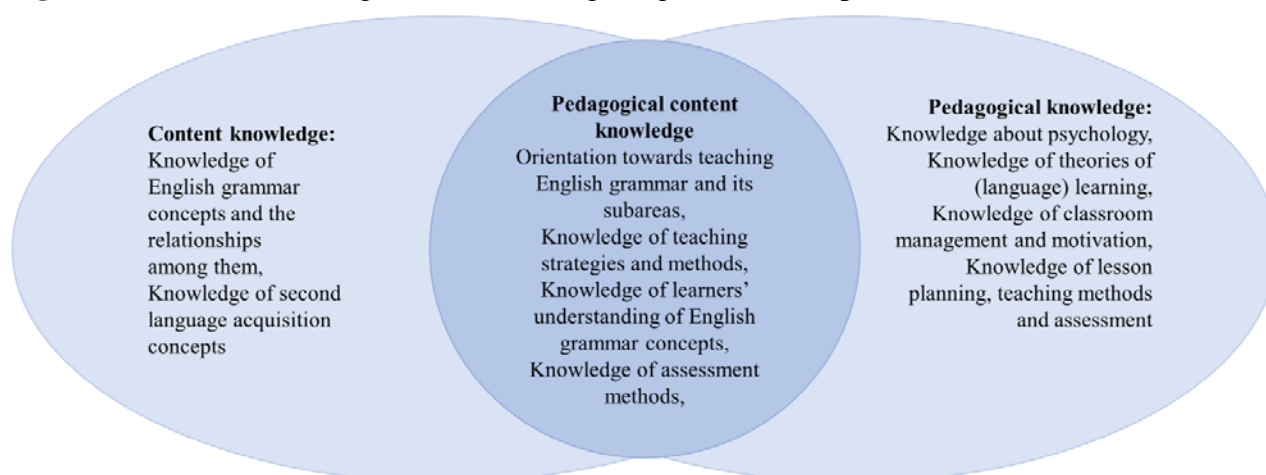
Theoretical background – Developing PCK

Teachers must possess the ability to teach in ways that encourage language development in a wide range of learners. Thus, the quality of the teacher's knowledge is a critical factor for learners' success. (Darling-Hammond, 2013; Etkina, 2010; Ibrahim, 2016; Karlsson, 2020). Excellent teachers skilled at guiding their learners do not intrinsically possess the qualities essential for effective teaching. Their skills are the product of their education, underlining the significance of ITE in developing teacher effectiveness (Darling-Hammond, 2013; Ur, 2012). Therefore, successful teachers benefit by enhancing both their subject matter knowledge and pedagogical knowledge, with each body of knowledge demonstrating high significance in ITE (Mishra & Koehler, 2006; Shulman, 2013, 1987). Teaching is a complex task encompassing multifaceted knowledge beyond a set of practical skills, often referred to as 'a bag of tricks' (Tsui, 2012, p. 16).

In line with the above argument, the author contends that it is vital to develop both subject matter and pedagogical knowledge in PSTs. In English language courses, PSTs are expected to study a range of components to acquire subject matter knowledge of their future teaching field, that is, 'content knowledge' (Figure 1) (Etkina, 2010; Ibrahim, 2016; Shulman, 2013). Content knowledge is one of the two pillars of teacher knowledge, which in the present study refers to various sub-areas of English grammar. This includes comprehension of fundamental linguistic terminology and grammatical concepts, characteristics of various word classes, and syntactic structure of the language. It also includes the

comprehension of second language acquisition theory, which explains how children learn a foreign language, including, for example, the concepts of 'input, output', and 'noticing' (Swain, 2000; Ur, 2012). To translate their knowledge of grammar into meaningful descriptions and explanations for students, PSTs require an in-depth understanding of the materials being taught (Holmbukt & Son, 2017, 2020).

The second pillar of teacher knowledge is pedagogical knowledge (Figure 1), which focuses on the ways people learn. This includes an understanding of psychology and insights of the processes through which children and young people acquire knowledge, in this case, language (Bransford et al., 2000). Pedagogical knowledge embodies teaching skills, which demonstrates a PST's ability to design instructional materials, structure teaching, and employ effective teaching methods for every lesson. It also involves classroom management skills and insights into students' prior concepts of the topic being taught and motivating them for further learning (Etkina, 2010; Karlsson, 2020; Shulman, 2013, 1987).

Figure 1. Teacher knowledge structure in English grammar. Adapted from (Etkina, 2010).

Content knowledge:
Knowledge of
English grammar
concepts and the
relationships
among them,
Knowledge of second
language acquisition
concepts

Pedagogical content
knowledge
Orientation towards teaching
English grammar and its
subareas,
Knowledge of teaching
strategies and methods,
Knowledge of learners'
understanding of English
grammar concepts,
Knowledge of assessment
methods,

Pedagogical knowledge:
Knowledge about psychology,
Knowledge of theories of
(language) learning,
Knowledge of classroom
management and motivation,
Knowledge of lesson
planning, teaching methods
and assessment

Until relatively recently, content knowledge and pedagogical knowledge were considered independent bodies of knowledge (Karlsson, 2020; Mishra & Koehler, 2006; Shulman, 2013; Zeichner, 2010). Over time, different approaches to teacher education have highlighted the importance of one domain of knowledge over another (Shulman, 2013). Shulman (2013) elevated the discourse on teacher knowledge by introducing the PCK construct, situated at the intersection of content and pedagogical knowledge (Figure 1). PCK represents the combination of two knowledge domains. To enhance their PCK, PSTs must practise clarifying content knowledge in ways that will be understood by students. This implies adding examples, demonstrations, and activities, which benefit learning (Etkina, 2010; Mishra & Koehler, 2006; Shulman, 2013, 1987).

Following Shulman's (2013) introduction of PCK, a growing body of research in different subject fields has focused on examining teachers' PCK (Baumert et al., 2010; Berry et al., 2008; Kind & Chan, 2019). Further, it is clear from the previous literature that both content and pedagogical knowledge play crucial roles

in determining instructional quality, which may directly impact students' learning outcomes and motivational development (Baumert et al., 2010; Chen, 2023; Hadjioannou & Hutchinson, 2010; Ismail, 2011).

PCK's significance as an epistemological concept is also evident in the literature on teaching English as a first or second language. Karlsson (2020) explored the extent of PCK among PSTs studying English grammar. She investigated how mini-lessons, delivered by PSTs to their peers, influenced the PSTs' PCK. Karlsson (2020) found PCK to be low among the 17 participants the first time the mini-lessons were conducted. However, in the second trial, as many as 15 participants demonstrated enhanced PCK. Similarly, Ismail (2011) investigated how microteaching (cf. 'mini-lessons') within a group of PSTs developed their instructional approaches and strategies for teaching English. The PSTs reported heightened awareness of their pedagogical skills, teaching strengths and weaknesses through the microteaching processes. Ibrahim (2016) conducted classroom research to determine teachers' demonstration of PCK when teaching English. The findings revealed a lack of high PCK in four out of five participants, and the participant who possessed expertise in both the subject matter and pedagogical knowledge such as adept teaching strategies, exhibited the best performance. Hadjioannou and Hutchinson (2010) explored PSTs' processes of preparing for teaching English grammar. The authors underscored the significance of content knowledge and PCK. They asserted that PCK, which involves a strong foundation in content knowledge of English grammar, is essential for fostering students' literacy development. The authors argued for embedding teaching trials in academic coursework to offer PSTs the opportunity to engage with students in real teaching.

The significance of PCK lies in its combination of content with pedagogical knowledge in specific fields like English grammar, fostering PSTs' deeper comprehension of the subject matter and effective teaching methods that can advance student learning (Hadjioannou & Hutchinson, 2010; Ibrahim, 2016; Karlsson, 2020; Shulman, 2013; Spada & Lightbown, 2022). Practical teaching experiences, essential for the professionalisation of teacher candidates (Cochran-Smith & Lytle, 2009; Kolb, 2015; Ur, 2012; Zeichner, 2010), may best be achieved through collaboration with schools, bridging the gap between theoretical campus learning and hands-on teaching practice (Hadjioannou & Hutchinson, 2010; Holmbukt & Son, 2020; Holmbukt et al., 2023; Larsen et al., 2024; Son et al., in press). The collaboration and joint guidance of a university and a school-teacher can thus significantly bolster PSTs' enhancement of PCK.

Method

This section outlines the research design, setting, and participants, and it details the preparation and implementation of the teaching trial conducted in this study.

Research design

This qualitative study explored the PSTs' views on the effect of teaching trials in a university-school collaboration to support their development of PCK concerning the grammar of EFL. It investigated the PSTs' experiences as they engaged in their first collaboratively designed and implemented teaching trial in a school. This took place within a university-school context involving a university teacher, a schoolteacher, and the PSTs.

A qualitative case study was selected, as it is well suited for exploring a phenomenon of contemporary nature in its real-life context. A case study is delimited by the time and specific activities carried out by one or more individuals, with researchers collecting data to study the phenomenon under investigation (Creswell & Creswell, 2018; Denscombe, 2014; Yin, 2009). The research methods employed included analysis of the PSTs' reflective texts and a focus group interview. The two methods were both important and contributed to the comprehensive data set and the three emerging themes from the analysis. Reflective texts are effective in exploring thoughts and personal experiences and can encourage thoughtful analysis and self-awareness. Reflection may thus serve as a powerful tool to develop one's learning and understanding, and consequently, one's professional growth (Klemp, 2013).

Focus group interviewing is an effective data collection method in educational research (Denscombe, 2014; Dilshad & Latif, 2013; Parker & Tritter, 2006; Sim & Waterfield, 2019). It lends itself to the in-depth exploration of a topic and offers insights into people's perceptions of situations (Dilshad & Latif, 2013; Parker & Tritter, 2006). It takes the form of group discussions or conversations with participants, who spontaneously expand on each other's contributions (Sim & Waterfield, 2019; Stewart, 2018). The participants thus need to have some commonalities with each other, such as studying in a university course together. They should possess adequate knowledge to give their viewpoint on the 'focus' topic being addressed in the conversation. Focus group interviews seek to gain insights into a group's collective opinions and, together with other methods, contribute to providing a holistic picture of the topic under investigation (Dilshad & Latif, 2013; Parker & Tritter, 2006; Sim & Waterfield, 2019).

Context and participants

The educational setting for the research study was a university in Norway offering a 5-year ITE programme. The study's participants comprised a mixed group of first- and second-year PSTs, studying English language and didactics (UiT, 2023) and aimed to teach English in the future to grades 5–10 in Norwegian schools. The ITE course consists of 15 study points taken over two semesters. Of the eight PSTs enrolled in this course, seven participated in the teaching trials.

The PSTs conducted the teaching trials outside their ordinary practicum. The trials were implemented in a relatively large secondary school in a local area with students aged 13–16. The participating schoolteacher was an experienced teacher

of English. He was new to this kind of teaching trial but had been previously engaged in mentoring PSTs during ordinary practicums. The university teacher was an experienced university educator.

Teaching trial preparation and implementation

The schoolteacher had an active role in facilitating the trial. He initiated the school-university collaboration to carry out the teaching trials, and he suggested a specific date for the participation of potential groups of students in the trials with a defined timeframe (Figure 2). He invited the PSTs to collaborate on the contents of the trials by listing the grammar topics that his students had been introduced to previously, the reinforcement of which might benefit the students if taught again. Since the PSTs had not engaged in teaching any of the grammar topics listed during their regular practicum, they were allowed to select any topic of their preference from the provided list. Subsequently, the PSTs chose to focus on grammar topics that had been covered in their university course. The school-teacher was enthusiastic about the trials, not only because of their collaborative nature but also because grammar, which is an essential element of EFL, had been less prioritised in teaching in the school. He anticipated that his students would improve their understanding of grammar, thus benefiting from the trials. Additionally, he viewed the PSTs' trials as a potential benefit to his own professional learning.

Figure 2. Timeline of the teaching trials collaboration.
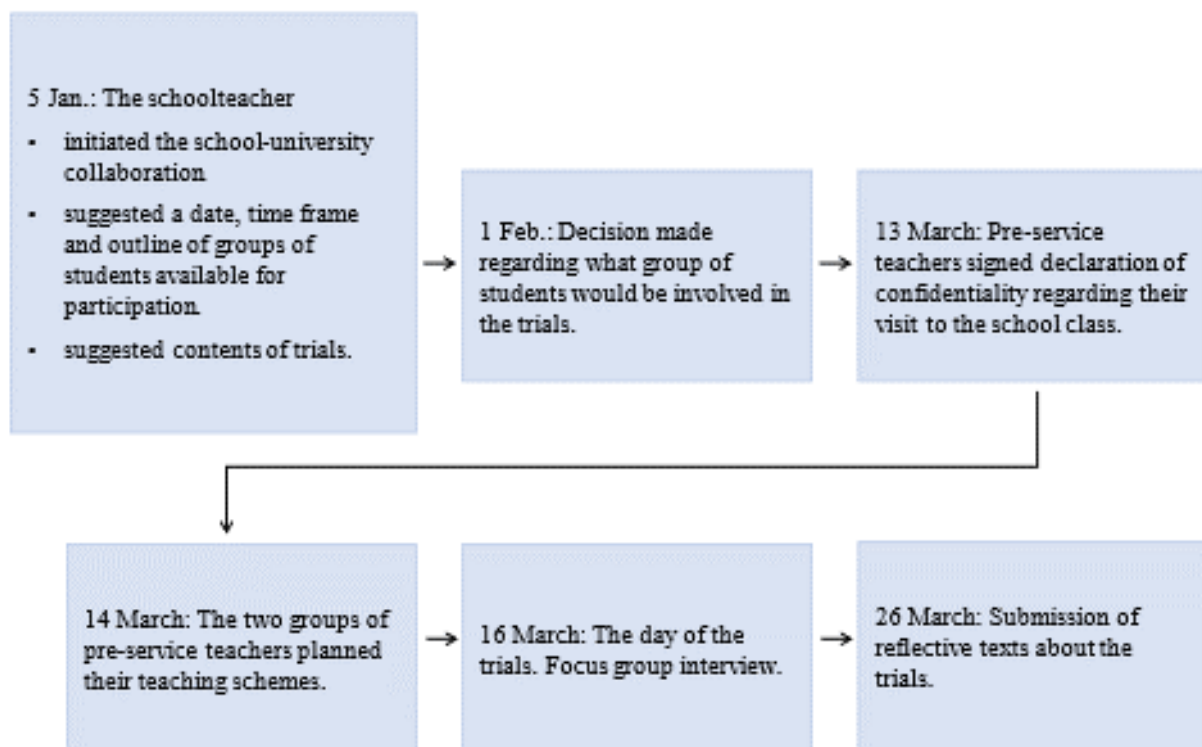
Once the declarations of confidentiality regarding visits to the local school had been signed, the PSTs started preparing their trials (Figure 2). They worked

together in two groups: three PSTs in Group 1 and four in Group 2. Each group spent three hours of university course teaching time planning their trials with the university teacher present to scaffold their process when necessary. Two days later in the week, each group conducted lessons with two groups of students aged 14–15 years at the local school. The same lesson was taught to each of the two groups of students. Before teaching the lesson a second time, the first lesson was reviewed, and the necessary adjustments were made. The lessons lasted 55 minutes each; thus, in total, the PSTs spent 110 minutes teaching English grammar. The schoolteacher and university teacher partly attended the trials but maintained a distance to avoid interfering, as their presence was primarily to fulfil their responsibilities of being available to their respective students, should the need arise.

The PSTs in Group 1 opted to work on present simple versus present progressive verb forms. The PSTs discussed the advantages of inductive versus deductive teaching methods for their topic and decided on a deductive approach. Given the topic's complexity, the PSTs believed that a brief introductory lecture explaining the rules and differences between present simple and present progressive would benefit the students, especially since Norwegian L1 learners tend to overuse the present progressive. They employed a present-practise-produce (PPP) methodology (Harmer, 2015), where 'present' involved explicit explanation of the key differences between the verb forms. This was followed by an individual writing task where the students were expected to 'practise' the forms to reinforce the correct usage of these verb forms. Finally, the 'produce' phase involved students engaging in a board game that utilised the specific verb forms. The PSTs aimed to try out this activity to observe its potential influence on the students' motivation and engagement.

Group 2 decided to apply a more inductive approach to teach adjectives and adverbs, a topic within their comfort zone for teaching. They sought to strengthen the students' existing knowledge of the word classes by engaging them in a range of tasks designed to suit potentially most of the students. Moreover, given that all members of the group also studied physical education, the PSTs integrated aspects of this discipline to enrich the lesson plan. The trial facilitated oral communication, fostering extensive interaction among students. First, the PSTs encouraged the students to demonstrate their prior knowledge of adjectives and adverbs. They were organised into groups where they discussed the meaning of an adjective, an adverb, and the differences between the word classes. Subsequently, the students were asked to provide examples of adjectives and adverbs. The next activity was a relay in which the students worked in two teams to categorise a range of examples into adjectives and adverbs. The concluding activity involved a bingo game in which students selected adjectives and adverbs from a word cloud and were required to categorise each selected word by its word class.

In preparation for the trials, the school and university teachers agreed that the teaching plans did not require strict guidelines, especially since this was the PSTs'

first trial. Consequently, they allowed the PSTs to make their own choices and directly experience the results of these choices in the classroom. For the same reason, the PSTs were not obliged to provide detailed information about the grammar content and the students' learning goals. However, the following guidelines were still provided. First, the PSTs were asked to think critically and creatively about the content of their teaching plans, activities to use, and their order. Second, they were required to include appropriate metalinguistic terms for learners of this age. Third, the PSTs were required to formulate their teaching plans in such a way that they assisted the students in accomplishing at least two of the competence aims described in the national curriculum for English, for example, "The pupil is expected to use a variety of strategies for language learning, text creation and communication", and "use knowledge of word classes and syntax while working on one's oral and written texts" (Norwegian Directorate for Education and Training, 2020b). The last part of the session consisted of the students' evaluation of the lesson; for example, whether they found the class interesting and motivating.

Data collection
This study aimed to explore PSTs' views on how the collaboratively designed and guided teaching trials supported their preparation for teaching English grammar. The data were collected through a focus group interview following the trials and a text analysis of the PSTs' written reflections on the trials submitted 10 days after the trials. From a validity standpoint, one might question whether conducting interviews before the PSTs wrote their reflective texts could have influenced their reflections. However, this sequence was necessary due to practical constraints. The university teacher highlighted the need for honest reflections, ensuring PSTs that their opinions would not result in repercussions. Therefore, the study results are deemed trustworthy.

Focus group interview
The unstructured interview was conducted in one of the school meeting rooms immediately following the trials, in the presence of the schoolteacher and the university teacher who assisted in stimulating dialogue among the PSTs. All seven PSTs participated in the focus group interview, which lasted 40 minutes. Since this was the first time the group had experimented with teaching English grammar, the interview facilitated exploration and reflection on various facets of this experience – encompassing professional, personal, and emotional dimensions related to the implementation of grammar lesson plans. While seeking responses across various dimensions of the experience, a central question posed to the group was: "What is your opinion on the preparation of teaching plans for English grammar and on trying them out in a school class?"

PSTs' reflective texts
Ten days after the teaching trials, the PSTs submitted their reflective texts based on their experiences of the trials (while their thoughts and emotions from the trials were still vivid in their memories). The length of each text ranged from one half to a full, typed A4 page.

Ethical considerations
The study was approved by the Norwegian Agency for Shared Services in Education and Research (Sikt), and prior to planning and executing the trial, the PSTs were provided with information concerning the ethical standards of the study. This included a consent form, information on the scope of the study, participants' anonymity, and their right to withdraw from the study at any time. All PSTs signed a consent form. The study and the writing of the present paper were discussed in the author's research group, and the group members gave feedback on both the content and the research process, for example, the data analysis. This feedback resulted in a more nuanced description of the analysis process.

Data analysis
A thematic analysis approach was utilised to analyse the focus group interview and the PSTs' reflective texts (Braun & Clarke, 2006). The procedure of transcription, coding, and identification of repeated patterns to form meaningful themes involved searching across the entire dataset – first the interview transcript and then the reflective texts. The analysis could be characterised as data-driven as it involved identifying themes within the data that aligned with and contributed to addressing the study's research question. Hence, the active role of the researcher (Braun & Clarke, 2006) in searching for information and interpreting data is acknowledged. Subsequently, the data in each of the two datasets were coded using colours to identify potential patterns. Each colour code was subsequently collated in a separate Word document, which generated a tidy overview of the data from all the documents. Thereafter, a hermeneutic approach was adopted (Bratberg, 2014; Gadamer, 2004) to review and analyse the codes and further assess how these could be combined to form overarching themes (Braun & Clarke, 2006; Creswell & Creswell, 2018). To ensure PSTs' anonymity during the coding process, the PSTs were assigned numbers as PST1, PST2, PST3 and so on.

Results

The data analysis resulted in three themes: 1) developing knowledge by connecting grammatical topics and practice in a school classroom environment; 2) developing knowledge through repeated trials, reflection, and student feedback; and 3) changing viewpoints on grammar teaching.

Developing knowledge by connecting grammatical topics and practice in a school classroom environment

The PSTs, who were yet to get the opportunity to teach grammatical topics during their practicum, were highly appreciative of the teaching trials. They got the opportunity to put their content and pedagogical knowledge to the test and interact with students in a real classroom setting. The PSTs indicated that teaching the grammar topics they had studied in the university course provided valuable learning experiences while also posing a unique challenge. This challenge stems from the inherent complexity of some topics, which are not only difficult to comprehend but also challenging to teach. PST5 commented:

> The complexity level of the grammar content we learn is quite high; working on how to explain the grammar topic to children made me simplify it, and I felt that it helped me quite a bit. Being in the classroom and practising grammar was great in helping me understand some of the points myself. I found it very valuable. (PST5)

PST5 argued that through the process of preparing and delivering the grammar lesson, she arrived at a better understanding of the subject matter, and thus gained content knowledge. In their university coursework, PSTs are mainly occupied with understanding and acquiring the complexities of grammar topics, which are tested in an exam at the end of the course. Acquiring content knowledge is a dominant factor; thus, the trials were found to be valuable as they assisted the PSTs in applying their knowledge and further contemplating what might be useful activities for students' learning. PST2 added:

> In addition, when we are asked questions about the grammar topic [by the students], we must think about it ourselves, in a way; it was a nice wake-up call, I think – that we can explain the topic thoroughly and not just have a limited grasp of it. (PST2)

There was unanimous agreement among the PSTs that teaching grammar in a classroom setting, facilitated by university-school collaboration, was critically important to enhancing both their content and their pedagogical knowledge. While an insufficient understanding of the students' level of metalinguistic knowledge posed a challenge, which to some extent may have led to less effective learning activities, their overall experience was still regarded positively. PST6 explained:

> The difficulty of not knowing how thorough you need to be when explaining word classes was overshadowed by the fun part of applying what you learned at university in a real class with students and not with fellow pre-service teachers. This makes these classes more fulfilling and authentic. If I did this session with fellow pre-service teachers, I would not be able to act like I would normally do as a teacher because it feels too forced. (PST6)

This reflection highlights the authentic challenges and joy of moving from theoretical learning to practical teaching and demonstrates the PST's enthusiasm for real student engagement over simulated peer interactions.

Developing knowledge through repeated trials, reflection, and student feedback

A significant factor in the PSTs' experience was that they were provided the opportunity to try their teaching methods with different groups of students twice. Although the variation in the degree of success in the first trial compared with the second trial was insignificant, the PSTs agreed on their improved performance in the second trial. A PST explained:

> From the first lesson to the last, I felt like I learned and got a better sense of how to explain and present the theory. Before the second lesson, I wrote more about what I wanted to say and felt more prepared. I also think the differences between the two verb forms became clearer to the students. This is a learning experience. (PST3)

Another PST added "explaining grammar to students in a clear and comprehensible manner becomes easier the more you get to do it. Therefore, it was really educational that we got to try our teaching plan twice with two different groups" (PST7). A third participant argued that their extensive and in-depth knowledge of the grammar topic might have hampered their ability to convey it in a comprehensible manner to the students. Delivering the lesson twice helped them to make revisions, and thus, they were successful in providing "an easier and more specific description for the second group" (PST1).

Group 1 participants, who conducted lessons on the present simple vs. the present progressive of verbs, reflected on various aspects of their trials. One of them detailed, "when teaching the theory part, we could have demonstrated that 'I am teaching' and 'I teach' translate to the same thing in Norwegian" (PST4). This observation is significant because it underscores the absence of an equivalent verb form to the English progressive in Norwegian. Understanding this linguistic distinction is crucial for Norwegian learners. PST4 noted that raising awareness of this difference could have effectively "highlighted the differences between the verb forms in English". In addition, Group 1 PSTs contended that they could have maximised the potential of the written tasks, for example by encouraging discussions among the students to elicit the level of their understanding of grammar.

Group 2 also reflected on their trials in more detail. PST7 argued that the students' learning of adjectives and adverbs could have been better scaffolded if the PSTs had provided them with a clear definition and explanation of the differences between the word classes on the whiteboard. Furthermore, PST7 expressed that in a potential, subsequent trial, they would organise the students into smaller groups for grammar relays[2] to ensure more equitable participation among the group members. In larger groups, PST7 noted the existence of a possibility for one person to assume the role of the leader and dominate decision-making. Upon further reflection on their trials, the PSTs noted that the objective

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2 A grammar relay is a classroom activity where students work in teams, for example, to sort word classes or to correct sentences, taking turns in a relay race format.

of developing students' knowledge of adjectives and adverbs was accomplished, although some students encountered difficulties in understanding grammatical terms. PST2 held the view that offering additional examples and prompting students to identify adjectives and adverbs in various sentences would have resulted in their enhanced understanding of these concepts. PST2 argued that better initial class management could have resulted in more successful instruction.

Additionally, the PSTs gained insight into the quality of their trials by requesting feedback from the students after the completion of their lessons. The students were asked to give their honest opinions since their feedback would assist the PSTs in improving their teaching skills (PST1). The essence of the feedback from the student group was that the majority enjoyed the lessons. While Group 2 asked for individual written feedback on post-it notes, Group 1 encouraged students to express their thoughts openly in class. However, it was felt that anonymous feedback might have yielded more comprehensive responses. PST4 noted that "one student commended our natural progression throughout the lesson, which consisted of theory, task, and fun activity. Another student admitted that he found the theory portion dull but enjoyed the game". Some students expressed the need for more in-depth explanations of adjectives and adverbs. Most of the students appreciated the sessions due to the practical activities and found the PSTs' lessons "a fun way of learning grammar" (PST3). PST3 reflected on this observation and reasoned as follows:

> Not very often do you hear a student say that learning grammar in secondary school is fun. And we all know that if the students think that learning is fun, they are more motivated to learn, which provides better prerequisites for learning. (PST3)

The PSTs conveyed overall contentment with the trials which encompassed their reflections on crucial elements of both subject matter and pedagogy. Having the opportunity to try their lesson plans twice was deemed essential for their learning.

Changing viewpoints on grammar teaching
The PSTs generally viewed the teaching trials positively regarding the development of their PCK of grammar. Despite this, they expressed reservations about their future roles in teaching English grammar. Concurrently, the findings suggested a change in their viewpoints, as their fear of teaching grammar stemmed from past experiences as learners in primary and secondary school, coupled with missing opportunities to practise teaching grammar during ITE practicums.

According to the PSTs, in both primary and secondary education, grammar was largely taught by giving (fill-in) exercises on handouts which "everybody hated" (PST2). This led to the fundamental assumption that grammar was demotivating. PST3 reflected:

> I think that when one hears the word 'English grammar', one automatically becomes demotivated; it is not anything the students look forward to. Personally, I do not look forward to it either; I have been dreading the prospect of teaching grammar. (PST3)

Given this shared background and negative experiences, the PSTs exhibited a lack of enthusiasm for teaching English grammar in the future.

Their lack of enthusiasm for future grammar instruction was also attributed to the fact that none of them had had the opportunity to teach grammar in their regular ITE practicum. Hence, their limited experience in grammar teaching constrained their knowledge and understanding of various grammar learning activities and methods. This was partly due to their belief in the importance of adopting not only explicit methods but also implicit ones, as well as more learner-active teaching approaches. (PST2, PST4). Additionally, the absence of grammar teaching in practicums left the PSTs with little knowledge about students' general familiarity with grammatical terminology. Subsequently, they were in doubt over which language to use in explaining grammar. Despite their worries about teaching grammar stemming from the reasons mentioned, their reflections indicated a change of perspectives, as explained by four of the PSTs below:

> Leading up to this practice day I was a bit scared of teaching in this age group since this was my first time. But when I left, I thought that this [the grammar teaching trial] was very educational, and I fancied myself teaching when I finish my studies. I felt most of them were enthusiastic about learning grammar, a lot more than I expected. This, I think was probably due to the practical and fun activities. (PST7)

> During the class [the trial], I learned that grammar can be difficult to learn or teach, but that it does not have to be boring. This clearly showed through the students' body language and feedback that this was a teaching method they appreciated. (PST1)

PST6 followed up on these statements by adding that the English grammar teaching trial was both "fun and stressfully challenging", and PST3 opined that "teaching grammar at school was an interesting experience in connecting my grammar learning and my future job of teaching students the same knowledge".

Considering the collective negative views of English grammar the PSTs had established in the past and their hesitation to teach grammar, the teaching trials appeared to yield enhanced confidence and enthusiasm for prospective grammar teaching as part of their work as professional English teachers.

Discussion

This study explored PSTs' views on how conducting teaching trials in a university-school collaboration, as part of their preparation for teaching grammar of EFL, can support their development of PCK.

The PSTs believed they developed their knowledge of grammar and grammar teaching by having the opportunity to connect grammar to practical teaching in the school. They regarded the planning and trying out of their lesson plans on English grammar as educational, as they experienced mastery in preparing and teaching relatively complex grammar topics. This indicates a development of their

PCK. Content knowledge, which is one of the foundational domains of PCK (Mishra & Koehler, 2006; Shulman, 2013, 1987), was explicitly mentioned by the PSTs. They argued that engaging in the trials led to a deeper understanding of the chosen grammar topics, thus enhancing their grammar content knowledge. This aligns with Karlsson's (2020) study, which documented an increase in grammar content knowledge after the participants engaged in micro-teaching with their peer groups (see also Hadjioannou & Hutchinson, 2010; Holmbukt & Son, 2020). Having a deeper understanding of content is crucial for effective teaching in general (Mishra & Koehler, 2006; Shulman, 2013, 1987) as the teacher's skills and competence are decisive for students' learning outcomes (Darling-Hammond, 2013). For PSTs, or teachers, to effectively convey grammar concepts to students through clear descriptions and explanations, a comprehensive grasp of the subject matter is needed (Holmbukt & Son, 2017, 2020). Grammar teaching incorporates both inductive and deductive approaches, as demonstrated by the PSTs. Group 1 focused on explicit grammar rules using a deductive approach, while Group 2 employed an inductive method, allowing students to collaboratively explore examples and discover patterns on their own. In both cases, the PSTs aimed to enhance students' understanding and awareness of the grammar topics.

The findings further indicate that one of the main reasons for the participants' development of PCK was that they were given the opportunity to carry out their teaching trials twice. Thus, by repeating their teaching trials, the PSTs could reflect on their lesson plans and make adjustments between trials based on their experiences from the initial trial. This aligns with Kolb's experiential learning paradigm (2015), where learning is considered a dynamic process. Knowledge is formed and modified through experience, in which "learners' experience, engagement, explanation, reflection, and discussion are vital in knowledge con-struction" (Holmbukt & Son, 2020, p. 7). According to the PSTs, the iterative nature of the trials, which blended content and pedagogical knowledge, led to a deeper understanding of the subject matter and effective teaching methods (as also noted in Hadjioannou & Hutchinson, 2010; Ibrahim, 2016; Karlsson, 2020; Shulman, 2013; Spada & Lightbown, 2022). The trials positively impacted the PSTs' PCK by not only enhancing their understanding of the grammar topics but also of how to apply various methods to teach the topics more effectively. Iterative processes may facilitate the enhancement of PCK, as supported by Ibrahim (2016, p. 161), who claimed that PCK "can only develop through complex actions and repeated practice".

In addition to repeated trials, the PSTs' reflections on the trials and on the students' feedback most likely facilitated the development of their PCK of gram-mar. This is consistent with Ibrahim (2016), who argued that teaching experiences along with reflection on them is an essential part of developing PCK. The PSTs engaged in a group reflection session after the trials and then individually wrote reflective texts some days later. The Group 1 participants reflected on, for instance, linguistic concepts such as simple and progressive verb forms,

considered the significant differences between English and Norwegian in this regard, and contemplated alternative approaches to increase student learning. The Group 2 participants, reflecting on various issues, assumed that dedicating more time to explore different examples of adjectives and adverbs could potentially have enhanced the students' understanding of these word classes. This reflection was prompted by some of the students' feedback, which, overall, was highly positive regarding the teaching provided by the PSTs. The reflection process indicated that the PSTs learned from their experiences by considering the students' feedback and by clearly articulating how modifications to their lesson plans could have further benefited the students' learning. Reflection thus emerged as a powerful instrument in nurturing the PSTs' learning, understanding, and professional development (Klemp, 2013). Thus, reflection is regarded as an effective learning strategy in the PSTs' efforts to enhance their PCK (Hadjioannou & Hutchinson, 2010; Kolb, 2015), which also pertains to mastering the grammar of EFL (Holmbukt & Son, 2017).

The findings thus show that the PSTs' response to the teaching trials was mainly positive, indicating a change in their viewpoints on English grammar and grammar teaching, which is advantageous for the improvement of their PCK of grammar. Their negative perceptions of grammar instruction were, firstly, linked to past experiences with demotivating mechanical drills and fill-in tasks, a teaching approach also noted in prior research (Hadjioannou & Hutchinson, 2010; Hos & Kekec, 2014). As Karlsson (2020) noted, PSTs' negative attitudes towards teaching grammar of EFL are often rooted in their early experiences and influenced by their teachers' similar negative views (see also Borg, 2001; Hadjioannou & Hutchinson, 2010; Karlsson, 2020; Shulman, 1987).

Secondly, the PSTs' reluctance to teach English grammar stemmed from limited teaching opportunities, leading to fear and uncertainty about their knowledge and effective teaching methods. Shulman (1987) and Borg (2001) argued that teachers who lack proper preparation often feel uneasy when teaching grammar. This lack of confidence in teaching grammar is echoed in the present study and in Hadjioannou and Hutchinson's (2010) study, which highlighted PSTs' dislike of English grammar and their perceived lack of competence in teaching it (see also Holmbukt & Son, 2017, 2020). Although most of the participants in Hadjioannou and Hutchinson's study reported self-assurance regarding the command of oral and written English; they did not share the same level of confidence in teaching grammar.

It is noteworthy that despite the PSTs' history of negative experiences with learning the grammar of EFL, their successful trial experiences contributed to a more positive outlook on grammar teaching (see related discussions in Borg, 2001; Hadjioannou & Hutchinson, 2010; Holmbukt & Son, 2020; Karlsson, 2020). Their success in their trials was deemed a critical accomplishment that bolstered their self-confidence in teaching grammar topics. Borg (2001) suggested that increased confidence and positive self-perceptions of teachers' ability to

teach complex grammar can motivate behaviour and teaching performance. Furthermore, such positive experiences are likely to enhance their PCK of English grammar, as indicated in other research (for example, Karlsson, 2020).

Conclusive remarks

This study revealed that PSTs thought that teaching trials within a university-school collaboration facilitated their development of PCK in selected topics of EFL. They believed that their PCK was enhanced through engagement in collaborative activities, which included preparation, execution, and reflection on instructional trials (Mishra & Koehler, 2006; Shulman, 1987, 2013). This process facilitated a more profound comprehension of specific grammatical concepts and efficacious pedagogical strategies. The study suggests that teaching trials offer a promising method for targeted and supportive training that addresses grammatical objectives in English language instruction within ITE. Additionally, these trials have the potential to shift PSTs' negative attitudes towards grammar of EFL, potentially leading to a greater willingness to teach grammar in the future. Such experiences can increase PSTs' confidence and expertise, as well as reduce the anxieties associated with teaching English grammar.

This study adds to the existing literature by proposing that PCK can be more effectively developed when participants engage with their content knowledge and pedagogical skills through repeated application in authentic classroom settings or simulated teaching environments (Cochran-Smith & Lytle, 2009; Etkina, 2010; Hadjioannou & Hutchinson, 2010; Ismail, 2011; Kolb, 2015; Zeichner, 2010). However, to gain a more comprehensive and in-depth understanding of how PSTs can develop PCK in the context of teaching the grammar of EFL, further research that extends beyond the scope of the present small-scale study is necessary. Establishing partnerships with schools is crucial for this endeavour, as they can provide PSTs with the necessary support and scaffolding from experts in both university and school settings.

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