

Transforming Campus into Practice: Collective Peer Teaching in Norwegian Teacher Education

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Abstract

This article reports on student perceptions of a peer-teaching experiment in three courses in Norwegian teacher education. The course design resulted from a desire to increase the level of student activity and provide students with teaching practice during on-campus sessions, in response to the current debate about “too much academization” and “not enough practice” in Norwegian teacher education. Survey data were collected from a total of 51 student respondents, who had all been peer teachers, students exposed to their peers’ teaching, and observers of their peers’ teaching. The survey questions explored their perceptions of the usefulness and learning outcome of this approach. The degree of satisfaction with the design varied between the groups, but in general the responses from the majority of students ranged from neutral to very positive. Group sizes and the contents of the individual courses may have influenced student perceptions, as may the degree of scaffolding, but in general the experiment may be judged a cautious success and an approach that might fruitfully be developed further.

Keywords: peer teaching, teacher education, student engagement, theory vs. practice

1. Introduction

There is currently an ongoing debate in Norway about the nature of teacher education. Arguably, the debate centers around the issue of “theory vs. practice”, sometimes phrased as “too much academization” of teacher education at the expense of experience-based knowledge (see for instance Tønnessen & Larsen, 2024). This has been a recurring debate in recent years, but it is

neither new nor confined to teacher education. In practice, it relates to all study programs aiming to train students for professions, as noted by Dewey as early as 1904 (as cited in Cochran-Smith et al., 2008): student teachers, like students aiming for other professions, must learn to master both the subject matter and the practical aspects inherent in their future professional role. This is therefore an issue of global interest, even though the present article focuses on teacher education in the Norwegian context only.

The question is: Is it possible, or even desirable, to give students insights into both theoretical knowledge *and* the practical classroom application of this knowledge? If so, what should the balance be between these two foci? Shulman's observation (2004, p. 524) that Dewey "takes for granted that theoretical preparation is needed for teachers" is pertinent to reflect on in the light of today's debate in Norway. The issue, then, is not whether teacher-education students need theoretical knowledge, but what kind of practical work is needed to accompany this theoretical knowledge. Very simplified, we may ask whether students primarily need knowledge gained from observing and imitating experienced teachers, or whether they would be better served by experimenting and learning in a "laboratory setting" where they can attain "more general knowledge that is portable, cosmopolitan, and broadly transferable" (Shulman 2004, p. 525). Given the current organization of teacher education in Norway, student teachers only have limited time throughout their education where they can learn from experienced teachers in an in-school context. Hence, it would be a definite advantage if the acquisition of theoretical knowledge could be combined with practical training, thus adding to their experience of being "in the hot seat" in charge of a class by providing the laboratory setting alluded to above.

The current paper reports on a local attempt at the University of Inland Norway (INN) to bridge the alleged theory-practice divide in teacher education in Norway. The approach is that proposed by Baltzersen (2024, p. 118), which entails "transforming campus into practice" (Baltzersen, 2024, p. 118), through various forms of "learning by teaching" or "peer learning" (ibid, pp. 1-5). Specifically, Baltzersen proposes a new concept, "collective peer teaching", which lets "all students rotate on being peer teachers during a course", and thus also challenges our fundamental assumptions about how teaching should be done, including the social positions in the classroom and its power structures" (ibid, p. 8). In this paper we report on student perceptions of the usefulness and learning outcome of this approach. The study has been guided by the following research question: How did the students' perceptions of peer teaching differ, in terms of quality, learning outcomes, and the connection between theory and practice in teacher education?

This study represents an attempt to address both the theory vs. practice issue, which is currently being debated, as well as the authors' shared experience of struggling to achieve the desired level of student engagement with theoretical knowledge. There is a very real need for more empirical knowledge about potential ways to combat the decline in student willingness to do preparatory work before coming to class, and willingness to participate actively in class (cf. section 2.2). Thus, this article focuses on a prerequisite for language learning (and, indeed, any kind of learning), namely student engagement. The study is also a partial replication of two studies on teacher education in Norway by Baltzersen (2024), and some of his results therefore provide a useful basis for comparison.

2. Background

This section addresses three background perspectives. Section 2.1 provides an introduction to the structure and content of teacher education at the University of Inland Norway. Section 2.2 introduces the theoretical framework underpinning the course design that is investigated through student perceptions in this paper, and section 2.3 presents some central tendencies from Baltzersen's (2024) empirical explorations of collective peer teaching in teacher education.

2.1 Teacher education at the University of Inland Norway

Initial teacher education in Norway is a five-year integrated master's degree of which the final two academic years are at the master's level. There are three primary programs of initial teacher education prospective teacher-students can apply for at INN which target the grade levels they will teach as in-service teachers: years 1-7 (primary school), 5-10 (primary and lower secondary school), and 8-13 (lower and upper secondary school). Across all study programs, students attend courses in general pedagogy, discipline-specific didactics courses, discipline-specific courses, and practice placement in schools as part of their degree. In this study, we recruited participants from three courses, one from each study program. These courses were all fifth-year MA courses and are further described in section 3.

In terms of teaching experience, the practice placement, required by law as part of initial teacher education in Norway, serves as the main site of authentic practical-professional development for student-teachers at INN, with the required 115 days for the 1-7 and 5-10 programs and 100 days for the 8-13 programs (Ministry of Education and Research, 2016a; 2016b; 2016c). This supervised practice placement is completed in local schools across all five academic years. During their first five days of practice placement, the student-teachers usually observe the lessons of in-service teachers, but they are expected to plan, carry out, and analyze their own lessons increasingly independently as they progress in their studies. At the point of data collection, the participants had completed between 85 and 115 days of teaching practice in total. The practice placement is kept separate from other academic work to help students focus on teaching, but this separation also creates two arenas for education, one oriented towards practice and one towards academia, which likely contributes to the theory-practice divide.

While practice placement is the primary practical engagement with the profession in authentic settings, there is an expectation that all teaching at the university should be oriented toward the practical aspects of the profession through student-active forms of learning. These principles are explicitly signaled by the government in White Paper 16 (2020-2021) from the Ministry of Education and Research, and in INN's strategy for the period 2021-2026 (INN, n.d. p. 12), as well as the study plans of the teacher education programs.¹ Thus, there is an expressed intention at the state, university, and course levels to ensure the initial teacher education is directly relevant to the teaching profession, an ambition promoted partly through student-active forms of learning.

2.2 Theoretical framework

With the increasing emphasis on professionalisation of teaching in higher education in the past few decades, there has been a commensurate shift to value experiential, or active learning over traditional transmission methods through, for example, lectures, particularly in teacher education (Kaufman, 1996; Rubin & Hebert, 1998; Smith, 2001; Devlin & Samarawickrema, 2010; Shaw, 2016; Ödalen et al., 2019; Valiente-Riedl et al., 2021). Increasingly, the focus of policy and research regarding Norway's teacher education is on building a more explicit connection between taught knowledge and students' practical experience in the classroom (Fosse, 2016; Ulvik et al., 2016; Sætra, 2018). However, as Valiente-Riedl et al. observe:

[E]xperiential learning is not delivered simply through altering the curriculum to include various forms of practical experiences such as internships, work-based learning, practicums and simulations (i.e., "experiences"). It also requires that practice is effectively and systemically integrated with prior knowledge and experience, informing future thought and behavior, and thus manifesting deep transformation of the student learning process. (2021, p. 233)

In other words, experiential learning needs to be integrated into the knowledge transmission processes, which remain the main function of higher education institutions.

The motive for employing a peer-teaching approach in this teacher education project was two-fold: firstly, to interpolate students into communities of teaching practice (Kimble & Hildreth, 2008) through situated learning, narrowing the gap between theory and practice; secondly, as a response to a decline in students' commitment to reading to learn and to encourage active engagement with lesson content and preparatory reading (MacLellan, 1997; Rubin & Hebert, 1998; Doolittle et al., 2006; Li et al., 2022). In the present experiment, students were introduced to peer teaching as both a pedagogic practice and a chance to experience and reflect on their own teaching practices, encouraging metacognition about how they approach content-based teaching. The pre-reading that students used in their lesson planning was selected by the tutors-as-facilitators, but the students' reading comprehension was advanced through reciprocal teaching of content to their peers. The project was thus built on a constructivist principle of teaching and learning, and integrated existing common pedagogical practices at higher education level – reading to learn and exchange of ideas in a seminar setting – but in a more formalised framework of peer-led lessons. The cognitive value of teaching as a learning practice has a long history in theories of educative practices (Rubin & Hebert, 1998; Duran & Topping, 2017; Baltzersen, 2024). The theory is based on the idea that by selecting and remembering key aspects of a subject, and being made to explain concepts to others, the student develops understanding of course material more effectively than if they were to passively read for knowledge, or even for active seminar discussion. Reading to teach requires more comprehension of reading material than any other higher education practice (Finlay & Faulkner, 2005; Doolittle et al., 2006).

Baltzersen (2024) describes the formal process of peer teaching which we employed in this study as “more structured and formalized [than mentoring a peer] with the peer teacher using a lesson plan and making the instructional material.” (p. 4) Thus, the group-based knowledge creation method used in this study combined the jigsaw method of collaborative learning (Aronson et al., 1978) with reciprocal teaching (Topping, 2005; Baltzersen, 2024, p. 5). Small groups of students, with the same ability and knowledge level as the rest of the group, were assigned to learn and then teach a small portion of the curriculum (Topping, 2005, p. 633). The reading on this topic was assigned to the whole peer group, but those who were selected to teach would be expected to “read with a stronger intention of understanding the content” (Baltzersen, 2024, p. 5). The jigsaw approach requires one part of the cohort to gain knowledge of a small section of the curriculum and then to teach it to the rest of the group, with the idea that by the end of the course every group will have contributed a “piece” of the subject, leading to mastery for the whole group.

A potential drawback of the peer-teaching approach is that the foundation of faculty expertise is temporarily withdrawn from the learning environment, as the model requires student teachers, who are essentially apprentices to the community of teaching, to take the role of the model teacher. The student teacher is also transmitting content knowledge (theory) that has been established through limited reading when compared with the long-term study of faculty staff and can experience “[f]ailures in ‘Meta-ignorance’” in not knowing where they have misunderstood a concept or fact (Topping, 2005, p. 633). However, the tutors select the assigned reading for the allotted peer-teachers for a specific week, thus scaffolding the learning process and by-passing the early research processes with which inexperienced student teachers might struggle. Tutors also provide individualised feedback in private conversation with the peer-teachers after their lesson, following Velez et al. (2011) as outlined in Baltzersen (2024, pp. 17-20). An advantage of knowledge transmission from peers, rather than hegemonic experts, is what Baltzersen (2024) terms “cognitive congruency”: peers understand the students' level of knowledge and understanding better, because they are at the same stage of learning (ibid, p. 22).

2.3 Previous research: Baltzersen (2024)

In order to build meaningfully on previous research in the Norwegian teacher education context, the questionnaire provided to participants in our peer-teaching project (described further in section 3) was a partial replication of two case studies carried out by Baltzersen (2024) on “collective peer teaching”. His projects were based around the implementation of peer teaching in courses in teacher education at one of the largest teacher training institutions in Norway (Baltzersen, 2024, p. 55). These case studies were carried out in a first-year part time Practical Pedagogic Education (PPU) course, and a mandatory, fifth-year GLU 1-7 pedagogy course, rather than in disciplinary subject content courses. The first case study took place over two days and replaced a formal exam with obligatory peer teaching on a chosen topic from the course syllabus, (Baltzersen, 2024, p. 39). The second study took place for the duration of the course, and the peer-teaching role was assigned on rotation. Observing students were expected to give the peer-teaching group feedback, who were in turn required to provide a written reflection on their peer-teaching experience, as a component of the course’s obligatory assessment. (Baltzersen, 2024, p. 56).

In Baltzersen’s (2024) case studies, there was a stark difference in student satisfaction – and perception of the utility of collective peer teaching – between the first and second study, with 81% satisfaction in the first two-day study and 73% satisfaction with academic learning (p. 42). In the second case study only 34% reported high satisfaction, 44% moderate satisfaction, with a mean of 3.1 for perceived learning outcomes (ibid, pp. 42, 57). Fifty-seven percent of student respondents from the first study reported perceived development in their vocational and subject-specific skills through participation in peer teaching, compared to 35% high, 28% low, perceived relevance for professional development in the second case study (Baltzersen, 2024, pp. 48, 57). In spite of the relatively low perceptions of professional relevance in peer teaching, 66% of the participants in Baltzersen’s (2024) second study highly rated being part of a professional learning community (ibid, p. 62).

In his conclusions, Baltzersen (2024) observed a high perception of academic learning, motivation and improvement of teaching skills in the first study, an improved result compared with a baseline of the national survey of teacher education. The second case study saw much lower assessment of perceived learning outcomes. The qualitative component of the second case study provided an explanation for the relatively negative perception of learning outcomes for that course, with complaints about repetition of subject content due to the self-selection of syllabus topics by the rotating peer teaching groups (Baltzersen, 2024, p. 58). The present study was therefore designed to eliminate the potential for such repetition, by assigning a unique topic to each peer-teaching team.

3. Methods

This section describes the data collection and analysis process, and discusses the ethical considerations underpinning the study.

3.1 Participants and data collection

The participants in the peer-teaching experiment were three sets of students enrolled in the fifth and final year of teacher education at the University of Inland Norway in the fall of 2025, in one of two programs: primary and lower-secondary education for the years 1-10 (‘GLU’) and lower- and upper-secondary education for the years 8-13 (‘lektor’). Two groups of GLU students participated, one specializing in English and the other in Norwegian, and one group of lektor students, who

specialized in English. In what remains of this paper, these will be referred to as ‘English GLU’, ‘Norwegian GLU’, and ‘English lektor’, respectively.

The group sizes varied, as did the content and organization of the peer teaching in the three courses, which we will now briefly introduce. The 15 English GLU students attended a course entitled “Making meaning”, which introduces students to the principles of genre pedagogy and how to apply these in primary and lower-secondary education classrooms. The 28 Norwegian GLU students attended a course entitled “Flerspråklighet”, which introduces students to recent theories on multilingualism and discusses how these be applied in a multilingual classroom. The final group of students comprised 8 English lektor students who attended a course entitled “Which English?”, where the focus is on language variation and language practices from a sociolinguistic perspective. Thus, all three courses combined a focus on linguistics and didactics.

In terms of the peer-teaching aspect of these courses, there were both similarities and differences. The main components of the peer teaching in each course are outlined in Table 1, which also describes the types of data collected from each course.

The authors of the present article were the course instructors for the three courses, and were collectively responsible for the design and implementation of the peer-teaching activities. While more objective distance might potentially have been gained from having the researcher and instructor roles separated and filled by different people, this was not practically possible. In any case, this greater degree of researcher involvement makes it possible for the present authors to reflect more deeply on the connection between the design and the outcome of the experiment than would otherwise have been possible.

Table 1: Overview of peer-teaching activities and data types collected²

Course	Peer-teaching activities			Data types collected
	<i>Teacher position</i>	<i>Student position</i>	<i>Observer position</i>	
<i>English ‘GLU’</i>	Design two sessions on a course-related topic targeting a) your fellow students, and b) pupils in school.	Receive instruction in course-related topics delivered by fellow students, and provide feedback to the students teaching the session.	Observe fellow students teaching a) other students and b) pupils in school, and prepare feedback.	– Questionnaire – Reflection notes – Observation
<i>English ‘lektor’</i>	In pairs, design a 45-minute session based on one of the articles from the syllabus.	Participate in a session based on an article from the syllabus and provide peer feedback to the students teaching the session.	Observe fellow students’ teaching and prepare feedback.	– Questionnaire – Observation
<i>Norwegian ‘GLU’</i>	In groups of 4 or 5 students, design a 45-minute session about a given grammatical phenomenon.	Receive instructions about the grammatical phenomenon delivered by fellow students, and provide feedback to the students teaching the session.	Observe fellow students’ teaching and prepare feedback.	– Questionnaire – Reflection notes – Observation

3.2 The dataset and analytical procedure employed in the present study

The present paper is based on the parts of the questionnaire mentioned in Table 1, which was adapted from the items used to survey the student participants of Baltzersen (2024: 119-126). The full questionnaire comprised 17 questions and two sets of claims to which the students' reactions were elicited, and is provided in Appendix I. However, only the items pertaining to the research questions of the present study will be included in the discussion here. This list comprises the following items (for ease of reference the original numbering has been retained): questions 1-7, claims 9A, 9H, 9I, and questions 11-13 and 15-17.

All students consented to the results from their anonymous questionnaires being used, so these were collated on a group basis and within-group percentages were calculated for the responses to the various questions. Since the groups vary in size, some form of normalized frequencies was needed to allow for across-group comparisons, and percentages were judged to be the most accessible measure. Reporting on the results in percentages also allows for highly relevant comparisons with the results presented in Baltzersen (2004). No statistical calculations have been carried out, and the quantitative data are presented in the forms of tables and diagrams which are then interpreted and discussed.

3.3 Ethical considerations

Before data collection started, the approval of the Norwegian Agency for Shared Services in Education and Research (Sikt) was granted on the basis of informed consent (reference number 749807). The questionnaire results reported in this paper were collected anonymously from the students, and all students consented to the results being used for research purposes.

4. Results

This section reports on those results that are relevant for the research question, as discussed in section 3.2. The total number of respondents for each course were as follows: 28 for Norwegian 'GLU', 15 for English 'GLU', and 8 for English 'lektor'. For reasons of space, only percentage results will be provided in the subsections of this chapter. Section 4.1 presents the results relating to overall satisfaction and quality, section 4.2 focuses on learning outcomes, and section 4.3 on the connection between teacher education and practice. In the subsequent section 5, the results are discussed and, wherever relevant, compared with the results from Baltzersen's "Second case study", as presented in his appendix (2024, p. 121-126).

4.1 Overall satisfaction and quality

Questionnaire item 1 attempted to elicit the students' overall satisfaction with the peer teaching. On a scale from 1 to 5, where '1' represented 'not satisfied' and '5' represented 'very satisfied', the responses to this item revealed some clear differences between the three student groups, as can be seen in Figure 1.

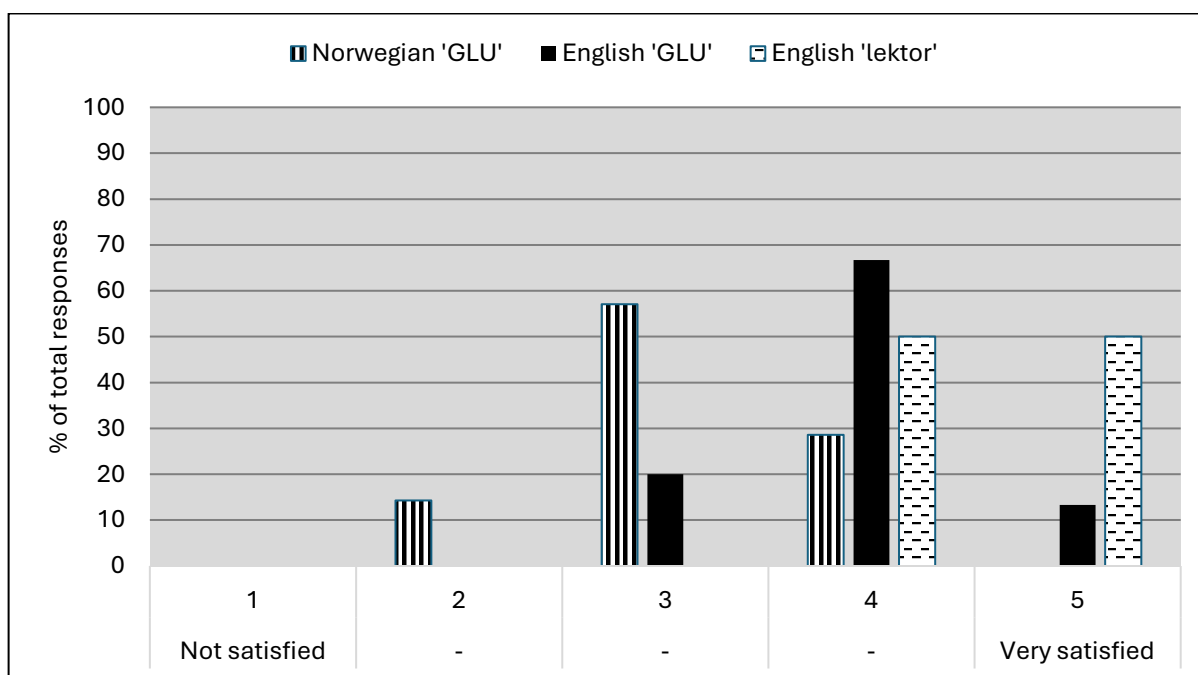


Figure 1: Responses to questionnaire item 1: "How satisfied are you with peer teaching overall?"

The English students appear to be more satisfied than the Norwegian students, and among the English students the group comprising 'lektor' students were more satisfied than the 'GLU' students. It should be noted, however, that no students reported that they were 'not satisfied'.

Table 2 provides further details about satisfaction with the quality of the peer teaching compared with instructor-led teaching.

Table 2: Percentage distribution of answers within each student group for questionnaire items 2 and 3

Q2:	How did you perceive the quality of the peer teaching compared to traditional instructor-led teaching in this course?				
	<i>Much lower</i>	<i>Somewhat lower</i>	<i>About the same</i>	<i>Somewhat higher</i>	<i>Much higher</i>
Norwegian 'GLU'	10.7	60.7	17.9	10.7	-
English 'GLU'	-	40.0	40.0	20.0	-
English 'lektor'	-	12.5	62.5	12.5	12.5
Q3:	If you compare with courses where there has only been traditional instructor-led teaching, how would you rate the overall quality of this course?				
	<i>Much lower</i>	<i>Somewhat lower</i>	<i>About the same</i>	<i>Somewhat higher</i>	<i>Much higher</i>
Norwegian 'GLU'	-	17.9	46.4	28.6	7.1
English 'GLU'	-	20.0	53.3	26.7	-
English 'lektor'	-	-	25.0	62.5	12.5

The results in Table 2 show that the Norwegian 'GLU' students were the least satisfied with the quality of the peer teaching compared to traditional instructor-led teaching, while the majority of the English 'GLU' students rated the peer teaching as of equal quality or better than the instructor-led teaching. The most positive were the English 'lektor' students, where 25% of the respondents rated the peer teaching as being of higher quality than the instructor-led teaching.

In terms of the overall quality of the courses, as addressed in item 3, the picture is similar, with the 'lektor' students being more positive than the 'GLU' students, but among the 'GLU' students the overall happiness is somewhat higher among the Norwegian students than among the English students.

Table 3 provides the results for questionnaire item 9I, which concerns the degree to which students or course instructors teach in a more engaging manner.

Table 3: Percentage distribution of answers within each student group for questionnaire item 9I

Q9I:	What is your reaction to the following claim: "My fellow students teach in a more engaging manner than the course instructors."				
	<i>Strongly disagree</i>	<i>Somewhat disagree</i>	<i>Neither agree nor disagree</i>	<i>Somewhat agree</i>	<i>Strongly agree</i>
Norwegian 'GLU'	10.7	21.4	39.3	25.0	3.6
English 'GLU'	13.3	6.7	20.0	46.7	13.3
English 'lektor'	-	25.0	75.0	-	-

Approximately 1/3 of the Norwegian 'GLU' students disagree with the claim that their fellow students are the most engaging teachers, while the greatest degree of agreement with the claim in item 9I is found among the English 'GLU' students. The English 'lektor' students are primarily neutral towards this claim, with a minority being somewhat negative, i.e. indicating that they think the course instructors teach in a more engaging manner than do their fellow students.

4.2 Learning outcomes

We now turn to another variable that might have impacted the students' perceptions of the overall quality of the peer teaching, namely the extent to which it helped them achieve the desired learning outcomes. First, we will take a look at the students' perception of how much they learned from peer teaching overall. The percentage distribution of the responses to item 4 is displayed in Figure 2.

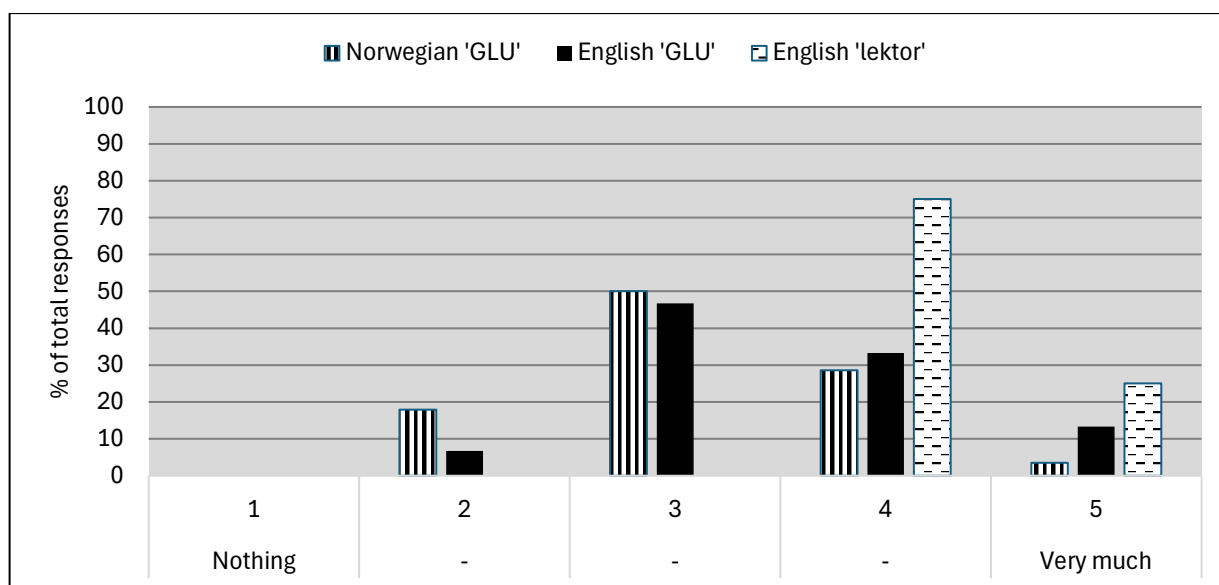


Figure 2: Responses to questionnaire item 4: "Overall, how much have you learned from peer teaching?"

As shown in Figure 2, the majority of the students in all three courses believed that they have learned at least something from participating in the peer teaching. While the two GLU groups have fairly similar response profiles, albeit with a slight tendency towards the English ‘GLU’ students being more positive than the Norwegian ‘GLU’ students, the ‘lektor’ students are overwhelmingly the most positive group.

Table 4 shows how the three student groups responded to questions related to the position as teacher in the peer-teaching sessions.

Table 4: Percentage distribution of answers within each student group for questionnaire items 9A and 7

Q9A:	What is your reaction to the following claim: “I have gained a very significant learning outcome from being a peer teacher myself.”				
	<i>Strongly disagree</i>	<i>Somewhat disagree</i>	<i>Neither agree nor disagree</i>	<i>Somewhat agree</i>	<i>Strongly agree</i>
<i>Norwegian ‘GLU’</i>	7.1	21.4	21.4	46.4	3.6
<i>English ‘GLU’</i>	-	-	33.3	60.0	6.7
<i>English ‘lektor’</i>	-	-	-	50.0	50.0
Q7:	How much have you learned from designing and teaching a class for your fellow students?				
	<i>1 Nothing</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very much</i>
<i>Norwegian ‘GLU’</i>	7.1	14.3	28.6	39.3	10.7
<i>English ‘GLU’</i>	-	-	26.7	53.3	20.0
<i>English ‘lektor’</i>	-	-	12.5	37.5	50.0

It is evident from the responses to item 9A that the English students feel they have learned a lot more from teaching their fellow students than is the case for the Norwegian students. It should be noted, however, approximately 50% of the Norwegian ‘GLU’ students selected one of the two most positive responses, but this is a lower proportion than in both the English groups, where 2/3 of the ‘GLU’ students and all of the ‘lektor’ students have selected the corresponding alternatives.

In item 7 the focus is broadened to ‘designing and teaching a class’, and if we compare the responses to this item with those to the previous one, we see the same overall trend, but with the following differences: The Norwegian ‘GLU’ students are slightly more positive, with a higher percentage selecting the most positive alternative. This correlates with a slightly lower proportion choosing the second most positive alternative. There is also a higher percentage selecting the middle-ground neutral alternative than was observed for item 9A, and a correspondingly lower percentage for the two most negative alternatives.

Table 5 shows the responses to the items dealing with the student position in the peer-teaching sessions.

Table 5: Percentage distribution of answers within each student group for questionnaire items 13 and 6

Q13:	As a participant in student position, how relevant has peer teaching been in terms of acquiring the content of the course?				
	<i>1 Not relevant</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very relevant</i>
<i>Norwegian 'GLU'</i>	10.7	17.9	53.6	14.2	3.6
<i>English 'GLU'</i>	-	20.0	33.3	33.3	13.3
<i>English 'lektor'</i>	-	-	25.0	12.5	62.5
Q6:	How much have you learned from being taught by your fellow students?				
	<i>1 Nothing</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very much</i>
<i>Norwegian 'GLU'</i>	-	28.6	53.6	17.8	-
<i>English 'GLU'</i>	-	13.3	46.7	33.3	6.7
<i>English 'lektor'</i>	-	-	25.0	37.5	37.5

The results for items 13 and 6 display the same overall trend as we have seen with regard to earlier topics, namely that the English 'lektor' students are the most positive, followed by the English 'GLU' students and the Norwegian 'GLU' students, in that order. It is also noteworthy that only a small minority in the Norwegian 'GLU' course feel that the course has been completely irrelevant (item 13), and that even that small minority still feel that they have learned something from being taught by their fellow students (item 6). More importantly, a clear majority within each of the three student groups are at a minimum neutral to the learning outcomes of being in student position.

The final perspective to be included in this section is learning outcomes resulting from observing other students' teaching. This perspective was covered by items 9H and 15-17 in the questionnaire, and an overview of the student responses is presented in Table 6.

Table 6: Percentage distribution of answers within each student group for questionnaire items 9H, 15, 16, and 17

Q9H:	What is your reaction to the following claim: “I have learned a lot from observing how my fellow students teach.”				
	<i>Strongly disagree</i>	<i>Somewhat disagree</i>	<i>Neither agree nor disagree</i>	<i>Somewhat agree</i>	<i>Strongly agree</i>
<i>Norwegian ‘GLU’</i>	7.1	14.3	50.0	25.0	3.6
<i>English ‘GLU’</i>	-	13.3	20.0	60.0	6.7
<i>English ‘lektor’</i>	-	-	12.5	37.5	50.0
Q15:	How beneficial has it been to observe your fellow students’ teaching?				
	<i>1 Not beneficial</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very beneficial</i>
<i>Norwegian ‘GLU’</i>	10.7	25.0	8.6	28.6	7.1
<i>English ‘GLU’</i>	-	20.0	26.7	40.0	13.3
<i>English ‘lektor’</i>	-	-	25.0	25.0	50.0
Q16:	How beneficial has it been to observe the various pedagogical methods chosen by your fellow students?				
	<i>1 Not beneficial</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very beneficial</i>
<i>Norwegian ‘GLU’</i>	7.1	17.9	25.0	32.1	17.9
<i>English ‘GLU’</i>	-	-	26.7	60.0	13.3
<i>English ‘lektor’</i>	-	-	50.0	12.5	37.5
Q17:	How beneficial has it been to observe and compare different levels of quality in the teaching of your fellow students?				
	<i>1 Not beneficial</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very beneficial</i>
<i>Norwegian ‘GLU’</i>	10.7	10.7	32.2	35.7	10.7
<i>English ‘GLU’</i>	-	6.7	33.3	46.7	13.3
<i>English ‘lektor’</i>	-	-	25.0	50.0	25.0

The majority of both groups of English students agree with the claim that they have learned a lot from observing how their fellow students teach, while the Norwegian students once again are more doubtful, although only approximately 20% of these students actively disagree with the claim (item 9H). The more vague question about the benefits of observing other students’ teaching (item 15) actually appears to have triggered a greater proportion of both positive and of negative responses

among the Norwegian students, while the English students are somewhat less positive in response to this item than to item 9H. Items 16 and 17 address the benefit, or lack thereof, of observing other students' choices of pedagogical methods and the quality in their teaching, respectively. For both of these items, approximately 20-25% of the Norwegian students are actively negative, but among the same students there are around 45-50% who are actively positive, with the remaining students being neutral. In the two English groups no students are actively negative, but a higher proportion of 'GLU' students than 'lektor' students are positive towards the benefits of observing the range of pedagogical methods, while the opposite is true as regards observing the level of quality in other students' teaching.

4.3 Connection between teacher education and practice

Figure 3 provides a visualization of the students' responses to the following question: "Overall, how much has peer teaching as a whole contributed to creating a closer connection between teacher education and practice?"

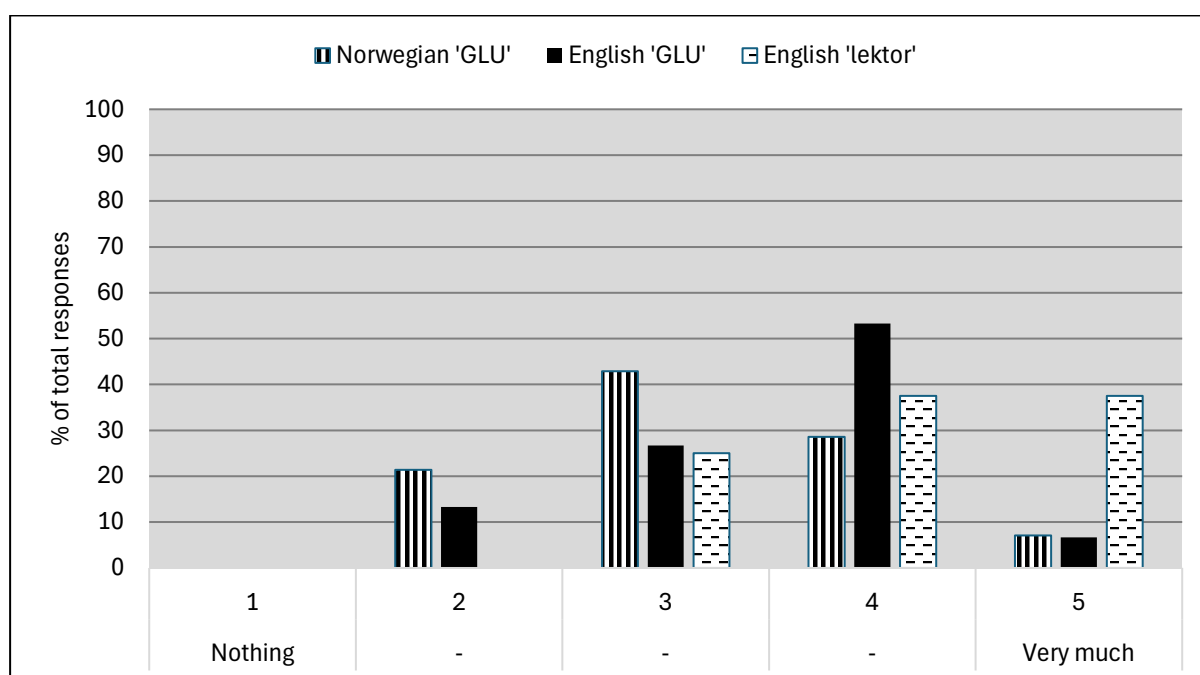


Figure 3: Responses to questionnaire item 5: "Overall, how much has peer teaching as a whole contributed to creating a closer connection between teacher education and practice?"

Approximately 1/5 of the Norwegian 'GLU' students and a slightly smaller proportion of the English 'GLU' students are somewhat negative in response to this question, but the majority of the students are either neutral or positive, with the 'lektor' students being the most positive in the sense that nearly 80% selected one of the two most positive alternatives. Items 11 and 12 attempted to elicit more details, and the responses to these are provided in Table 7.

Table 7: Percentage distribution of answers within each student group for questionnaire items 11 and 12

Q11:	As a participant in student position, how relevant has peer teaching been for your future work as a teacher?				
	<i>1 Not relevant</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very relevant</i>
Norwegian 'GLU'	7.1	28.6	39.3	17.9	7.1
English 'GLU'	-	20.0	26.7	40.0	13.3
English 'lektor'	-	-	12.5	37.5	50.0
Q12:	As a participant in teacher position, how relevant has peer teaching been for your future work as a teacher?				
	<i>1 Not relevant</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5 Very relevant</i>
Norwegian 'GLU'	7.1	28.6	35.7	21.5	7.1
English 'GLU'	-	20.0	33.3	33.3	13.3
English 'lektor'	-	-	12.5	37.5	50.0

Items 11 and 12 address the relevance of the student and teacher position, respectively, for the students' future work as teachers, and it can be observed that there is a wider range in the responses from the Norwegian students, but that overall the English students believe peer teaching is more relevant for their future work as teachers than the Norwegian students do, although the 'lektor' students are more positive than the English 'GLU' students.

5. Discussion

This section provides discussion and contextualization of the quantitative results presented in section 4.

5.1 Overall satisfaction and quality

In terms of overall satisfaction with peer teaching, the results in Figure 1 (cf. section 4.1) showed that none of the student groups was primarily negative, but there were differences between the groups in terms of their level of satisfaction, with the Norwegian 'GLU' students reporting the lowest level of satisfaction, and then progressively higher levels of satisfaction in the English 'GLU' and 'lektor' groups. However, while Figure 1 gives a snapshot overview, more details are needed to tease apart which areas or components of peer teaching caused some students to be more satisfied than others. Thus, Table 2 (cf. section 4.1) presented the student responses to questions about the quality of the peer-teaching compared to instructor-led teaching and about the overall quality of the course compared to courses with only instructor-led teaching. From the results in Table 2, we can see that one of the potential explanatory factors for the difference in overall satisfaction is that the Norwegian 'GLU' students were more critical of the quality of the peer teaching than the two other student groups, and that the English 'lektor' students were more positive than the English 'GLU' students. Surprisingly, however, the responses to item 3 indicate that the overall quality of the three courses in question is not judged to be lower than other courses with instructor-led teaching. Admittedly, approximately 20% of both the Norwegian and English 'GLU' students selected 'somewhat lower' as their response, but this is much lower than the percentages who selected the same alternative for item 2 (i.e. the quality of peer-teaching compared

to instructor-led teaching in the same course). One might have expected the Norwegian ‘GLU’ students in particular to have been more negative in their responses to item 3 (overall quality), but one possible interpretation is that the instructor-led teaching in their course was of a sufficiently high quality to compensate for the perceived lower quality of the peer teaching.

The responses to item 3 about overall quality could also be compared to those reported by Baltzersen (2024, p. 124) for his item “I think this teaching is better than traditional seminar teaching with a teacher educator”. The students in Baltzersen’s study were decidedly more negative towards the quality of the peer teaching than the students in the present study, with approximately 1/3 on the “disagree” end of the scale and about the same proportion neutral and positive. It is difficult to suggest a reason for this discrepancy, given that the student groups are similar in terms of the teacher education programs they belong to, but it should be borne in mind that Baltzersen’s peer-teaching experiment was carried out within a course in pedagogy. Thus, although the specific topics may be new to the students, the fact that they were fifth-year students meant that they had already gained extensive experience with pedagogy as a field of study. In the present study, the topics covered were related to previous topics within the subjects of Norwegian and English, but the actual approaches were completely new. Thus, the students acting as peer teachers in the present study may have experienced a greater degree of motivation to prepare their instruction very carefully, given the newness of the course contents, and those acting as students may have felt reassured by the potentially simplified versions of the contents presented by their peer teachers. In this way, the students in the present study may have collectively made more of an effort, and this may have been the cause of the more positive attitudes towards the quality of the peer teaching than those found by Baltzersen (2024).

Finally, as regards overall quality and satisfaction, the results presented in Table 3 (cf. section 4.1) showed that a greater proportion of ‘GLU’ students than ‘lektor’ students felt that their fellow students taught in a more engaging manner than the course instructors. This is somewhat surprising when viewed in conjunction with the results discussed earlier in this section, where the ‘lektor’ students were more positive towards the quality of peer teaching than the two ‘GLU’ groups were. On the other hand, the Norwegian GLU ‘students’ had the highest proportion of students who did not think that the peer teachers were more engaging than the course instructors, and this may at least partly explain their lower degree of overall satisfaction with the peer teaching, as discussed above in relation to the results presented in Table 2.

5.2 Learning outcomes

The results reported in Figure 2 (cf. section 4.2) showed that all of the students surveyed in the present study reported that they had profited in terms of learning from participating in peer teaching. Interestingly, the questionnaire item reported in Figure 2 is identical to a question asked by Baltzersen (2024, p. 121), and all three of the student groups in the present study are more positive towards the overall learning outcome than his students were, with fewer explicitly negative and more explicitly positive responses. On the basis of the details about the design of the peer-teaching sessions given in Baltzersen (2024), it is difficult to pinpoint any particular reason for this discrepancy, but it is possible that the students in the present study felt that the three courses represented here presented them with more new knowledge overall (cf. the discussion of course content and the comparison with Baltzersen (2024) in section 5.1), which also meant that the potential for learning new things was greater. Further exploration of this must await further study, but it is possible, on the basis of the present dataset, to also explore whether specific positions (teacher, student, or observer) were found to contribute to the students’ achievement of the learning

outcomes. It is to these three angles that we now turn, on the basis of the results presented in Tables 4, 5, and 6 (cf. section 4.2).

As regards the teacher position, the results in Table 4 showed that all student groups felt they had learned either something or a lot from teaching their fellow students, with the most positive group being the English 'lektor' students. However, approximately 1/3 of the Norwegian 'GLU' students did not agree with the majority. When designing the peer-teaching session was included, a difference emerged between the two groups of English students, in that the 'GLU' students become more positive when the 'design' element is included in the questionnaire item, while the 'lektor' students become slightly less positive. If we compare these results, and in particular item 9A, which deals with overall learning from being a peer teacher, with the ones reported by Baltzersen (2024, p. 121), we once again see that Baltzersen's students were roughly divided into three groups, with 1/3 being negative to the learning outcome from being in peer teacher position, 1/3 being neutral, and 1/3 being positive. This pattern is perhaps most similar to the Norwegian 'GLU' students in the present study, but this group is nonetheless less explicitly negative and more explicitly positive than Baltzersen's students. We tentatively suggest that this may be related to the explanation posited earlier, which, albeit hypothetical in the absence of further exploration, highlights the extent to which the courses represented in the present study may be perceived to contain more new knowledge than the pedagogy course where Baltzersen carried out his study.

In summary, it seems that the results presented in Table 4 go some way towards explaining the differences between the groups that were highlighted in relation to Figure 2: The teacher position was perceived as contributing more towards learning outcomes by the English students than by the Norwegian students, and the 'lektor' students found it more useful in this regard than the English 'GLU' students. However, as can be seen in Figure 2, no students selected 'nothing' as the response to a question about their overall learning outcome from peer teaching, and it is now clear that this must be due to something outweighing the teacher position in the Norwegian 'GLU' students' perception, since some of them selected the most negative alternative for both of the items included in Table 4. A potential explanation for this may be found in the results for the items related to the student position in peer teaching.

The informants' attitudes towards the student position were elicited by several items, two of which are reported in Table 5. The majority of students are neutral or positive to the learning outcome of being in student position, but given that the two items included in Table 5 address two related aspects, one might have expected the responses to each item to form a more unified picture within each group than is actually the case: For instance, 62.5% of the 'lektor' students perceive the student position as very relevant for acquiring the course contents, while only 37.5% of the same student groups state that they have learned 'very much' from being taught by their fellow students. Similar reductions occur with regard to the two other student groups. It must therefore be something else in the student position (i.e. other than the teaching provided by other students) that has contributed to the relevance of the student position for acquiring the course contents, but quite what this is must await further study. It should also be noted that item 6 ('How much have you learned from being taught by your fellow students?') is the only one of these more detailed items where none of the Norwegian 'GLU' students selected the most negative alternative. This may be part of the reason why none of these students reported that they had learned nothing from peer teaching overall (cf. the discussion of Figure 2).

Finally, we turn to the observer position, for which relevant student responses were summarized in Table 6 (cf. section 4.2). The items relating to the observer position in peer teaching are very similar to questions asked by Baltzersen (2024, p. 124). It is therefore interesting to note that, as regards the benefits of observing other students' teaching, Baltzersen's students are somewhat similar to 'GLU' students in present study, but more negative than 'lektor' students (who were the most positive in the present study), and it should be noted that the English 'GLU' students are more explicitly

positive than Baltzersen's students. When it comes to observing the pedagogical methods of other students, the Norwegian 'GLU' students are very similar in their responses to those reported by Baltzersen, while the English students (both groups) are more positive, and the same could be said regarding the perceptions of observing different teaching qualities. The difference between the student groups in the present dataset could be perhaps explained by the range of teaching methods and the quality of the teaching on display within each of the groups, which the survey did not attempt to capture. If this is the explanation for the differences within the present dataset, a similar mechanism might account for the differences between the two English groups in the present study and the pedagogy students surveyed by Baltzersen (2024).

Since the responses to items addressing similar topics sometimes do not correspond very well, it is difficult to draw any firm conclusions regarding which learning position the students found most beneficial. Tentatively, we might suggest that the teacher position has been perceived as the most useful across the board, and this is perhaps to be expected as all the participants are aiming towards that profession. But at least for some items there are relatively high proportions that found the positions of student and observer beneficial as well, so it may be that there is unexploited potential here in that the students might find these positions more useful if they were encouraged to reflect on the potential learning outcomes of them to a greater extent than may have been done in this iteration of the courses.

5.3 Connection between teacher education and practice

A major catalyst for the peer-teaching experiment was a desire to explore possibilities for creating tighter connections between teacher education and practice in line with the increased focus in Norway's teacher education on a more explicit link between taught knowledge and students' practical experience (e.g., Sætra, 2018; Ulvik et al, 2016; Fosse, 2016; see also section 2.2). It is therefore of paramount importance to explore the students' perceptions regarding this topic, and relevant findings were reported on in Figure 3 and Table 7 in section 4.3, where it was shown that the majority of students are neutral or positive towards the contribution of peer teaching towards creating a closer connection between theory and practice. It was also shown that the English students are generally more positive than the Norwegian students, with the 'lektor' group being the most positive. The reason why the 'lektor' students are overwhelmingly more positive than the 'GLU' students regarding relevance cannot be directly extrapolated from the questionnaire results, but the fact that the 'lektor' students' future pupils will probably be older and more advanced than the 'GLU' students may have led to them perceiving a greater degree of relevance in teaching with their fellow students as the target group.

These findings may suggest that the students see the value in terms of taught knowledge, but not to the same extent in terms of the pedagogical process and its subsequent link to teaching practice. According to Bainbridge and Macy (2008), the natural learning communities formed by student teachers tend to increase student teachers' knowledge about teaching and learning (see section 2.2). While this appears to be the case for many of the students who participated in peer teaching, the connection between pedagogical process and teaching practice needs to be made more explicit so as to shift the focus from outcomes in terms of discipline knowledge and toward the actual process of teaching.

6. Conclusion and implications for the teaching and learning of languages

As shown in section 4, the answer to the research questions presented in section 1 is that overall the English 'lektor' students were most satisfied, followed by the English 'GLU' students and the Norwegian 'GLU' students. The extent to which one can generalize based on one iteration of a peer-teaching design in each of three courses is obviously limited. Nevertheless, we would claim that the results presented here give us reason to be cautiously optimistic about this type of course design in teacher education: no questionnaire item returned explicitly negative responses from a majority of the students, and although the three groups differed in their level of satisfaction, we believe that a second iteration with more scaffolding might help the students to see even more clearly the benefits of "transforming campus into practice".

The discussion in section 5 highlighted similarities and differences with the results presented by Baltzersen (2024). While not directly comparable, the present study is a partial replication of Baltzersen's, and to a certain extent the results can inform each other. The comparison is made difficult by the different subjects involved, but nonetheless, both studies seem to point towards the same conclusion: peer teaching may be one fruitful way in which to bridge the alleged theory-practice divide in teacher education, since, at its best, it allows student teachers to both acquire theoretical subject knowledge *and* to "mature as reflective practitioners" through "aligning their pedagogical beliefs with their pedagogical actions", all while cultivating a "stronger learning community where all students actively support each other" (Baltzersen 2024: 118). Future research would do well to incorporate an even greater level of scaffolding than was the case in the present study, as well as expanding the focus to include subjects other than English and Norwegian. If peer teaching is established as a teaching method from early on in teacher (and other professional) education, this may also solidify the practice and help to make students more aware of what is required of them in each of the three positions, and thus increase the quality of the student performances, which would probably also entail even greater perceived usefulness than was the case for the informants in the present study. Even without this strong foundation, however, we believe that the experiment reported on in this study has demonstrated the usefulness of peer teaching as a pedagogical practice.

Endnotes

- 1) See <https://studiekatalog.edutorium.no/inn/nb/program/MGL217/2025#Arbeids-og-undervisningsformer>, <https://studiekatalog.edutorium.no/inn/nb/program/MGL2510/2025#Arbeids-og-undervisningsformer>, and <https://studiekatalog.edutorium.no/inn/nb/program/LU2SPF/2025#Arbeids-og-undervisningsformer> for teacher education for years 1-7, 5-10, and 8-13, respectively.
- 2) The reflection notes, ranging from 500 to 2,000 words in length depending on the course, and the observation notes offer the opportunity to reflect on the questionnaire results as well as the entire experiment from a more qualitative viewpoint. Due to space limitations, however, this cannot be done here, but will be carried out in a future publication, which is currently in preparation.

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5. *Alt i alt, hvor mye har hverandreundervisningen som helhet bidratt til å knytte praksis nærmere lærerutdanningen?*

Ingen ting
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Veldig mye

6. *Hvor mye har du lært av å bli undervist av medstudentene dine?*

Ingen ting
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Veldig mye

11. Som deltaker i studentposisjon, hvor relevant har hverandreundervisningen vært for din fremtidige jobb som lærer?

Ikke relevant Veldig relevant
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

12. Som deltaker i lærerposisjon, hvor relevant har hverandreundervisningen vært for din fremtidige jobb som lærer?

Ikke relevant Veldig relevant
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

13. Som deltaker i studentposisjon, hvor relevant har hverandreundervisningen vært når det gjelder å tilegne seg emnets innhold?

Ikke relevant Veldig relevant
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

14. Hva er din reaksjon på følgende påstander:

	Svært uenig	Litt uenig	Verken enig eller uenig	Litt enig	Svært enig
«I dette emnet har jeg fått mulighet til å være deltaker i et profesjonelt læringssfellesskap.»					
«Jeg har vært en engasjert deltaker i disse undervisningstimene.»					
«Jeg synes forholdet mellom studentene har vært veldig godt.»					
«Jeg synes undervisningen har fokusert på sentrale spørsmål knyttet til læreryrket.»					
«Jeg synes hverandreundervisning er bedre enn tradisjonell organisering med undervisning ledet av en som er ansatt i lærerutdanning.»					
«Det er viktig at lærerstudenter gjennomfører hverandreundervisning som en del av lærerutdanning.»					

15. Hvor nyttig har det vært å observere medstudenters undervisning?

Ikke nyttig Veldig nyttig
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

16. Hvor nyttig har det vært å observere de forskjellige undervisningsmetodene som dine medstudenter valgte?

Ikke nyttig
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Veldig nyttig

17. Hvor nyttig har det vært å observere og sammenligne ulike kvalitetsnivåer i dine medstudenters undervisning?

Ikke nyttig
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Veldig nyttig

18. Hvordan vil du beskrive klassemiljøet i emnet dette semesteret?

Ikke godt
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Veldig godt

19. Synes du at hverandreundervisning har hatt en positiv innvirkning på klassemiljøet?

Ikke godt
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Veldig godt