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# Constructing a pedagogical practice across disciplines in pre-service teacher education

In this paper we report a qualitative case study of a teaching intervention in which a pre-service subject teacher pair planned and conducted a course integrating Finnish language and ethics in a multilingual setting. Audio-recorded planning sessions and interviews including learning diaries were analysed using qualitative content analysis to identify the dynamics of collaborative cross-curricular pedagogical practice development and pedagogical language knowledge. The analysis revealed tensions in crossing the boundary between language and content knowledge. The study suggests that when creating cross-curricular practices, student teachers benefit from longer-term processes and theory-based supervision and modelling for reflecting on the development process.

Keywords: pedagogical practice development; teacher education; boundary crossing; language across curriculum; pedagogical language knowledge; pre-service teachers

Highlights:

- Student teachers of ethics and language collaborated to develop a shared pedagogical practice across disciplines.
- Pedagogical practice development was governed by L2 learners' limited language skills.
- Student teachers emphasized vocabulary over discursive and textual aspects of the subject.
- Student teachers justified the oversimplification of tasks and materials by learners' deficient language skills.
- Change in pedagogical approach requires reflective supervision and a long-term process.

## 1 Introduction

The increasing diversity and mobility of societies together with education reforms toward learner-centred and multidisciplinary pedagogical approaches have recently raised interest in crossing boundaries within and across communities of practice (see e.g. Akkerman & Bakker, 2011; Lonka, 2018). In this article, we focus on teacher education in Finland and investigate how pre-service teachers negotiate and collaborate in developing their pedagogical practice and pedagogical language knowledge across the subject boundary

between Finnish as a second language and ethics content knowledge in a multilingual and multicultural setting. Deeper understanding of student teachers' collaborative meaning-making is crucial for developing pre-service teacher education in terms of timely supervision practices and relevant supportive tools.

In Finland, as a consequence of the growing number of migrant students in recent years (Statistics Finland, 2017), there is an increasing need for language and culture sensitive pedagogy across curricula. Furthermore, the current revised National Core Curriculum for Basic Education introduces cultural diversity and language awareness as one of seven cornerstones for the development of school culture (NBE, 2014). However, in an extensive nationwide survey, in-service teachers clearly articulated the need to enhance their expertise in teaching in culturally and linguistically diverse contexts at all educational levels (Kuukka, Ouakrim-Soivio, Paavola, & Tarnanen 2, 2015). The integration of language and content teaching is central to the provision of quality education for all (Bunch, 2013; Walqui & van Lier, 2010). In multilingual learning settings, in particular, in order to provide optimal learning conditions for all learners and support both disciplinary and language development, teachers need knowledge and understanding of how language is used to create meanings in their subject and how to scaffold learning by drawing on learners' current language skills (e.g. Cummins, 2001; Walqui & van Lier, 2010). International research provides evidence that mainstream teachers' abilities to locate and utilise relevant linguistic and cultural information about their students is often inadequate and even ignored, which may lead to vague and ill-defined assessment feedback and failures in setting appropriate aims for language and literacy learning (e.g. de Jong, Harper, & Coady, 2013; Faltis, Arias, & Ramírez-Marín, 2010; Pettit, 2011). Various studies have also reported on teachers' inability to address the language and literacy demands of their discipline, the disregarded and unperceivable role of language in meaning-making, and a narrow focus on vocabulary and terminology (e.g. Aalto & Tarnanen, 2015; Creese, 2010; Gleeson, 2010; May & Smyth, 2007; Zwiers, 2006).

Amid curricular and other educational change, teachers need to be 'adaptive experts' (Love, 2009, p. 542; see also Bransford, Darling-Hammond, & LePage, 2005) who are able to innovate and develop teaching practices both individually and collaboratively across disciplines ahead of time as a response to changing contexts and needs. The increasing diversity in schools challenges teachers and teacher education institutes to critically reflect on the tacit aspects of their disciplinary practices (Creese, 2010; Wenger, 1998) and develop their expertise in collaboration across subject borders (Pawan & Ortloff, 2011) in order to cater for all students' learning and adapt their teaching accordingly.

In the analysis of student teachers' collaborative development of a shared pedagogical practice across disciplines, our conceptual framework (see Figure 1) draws on the sociocultural view of learning (Vygotsky, 1978).

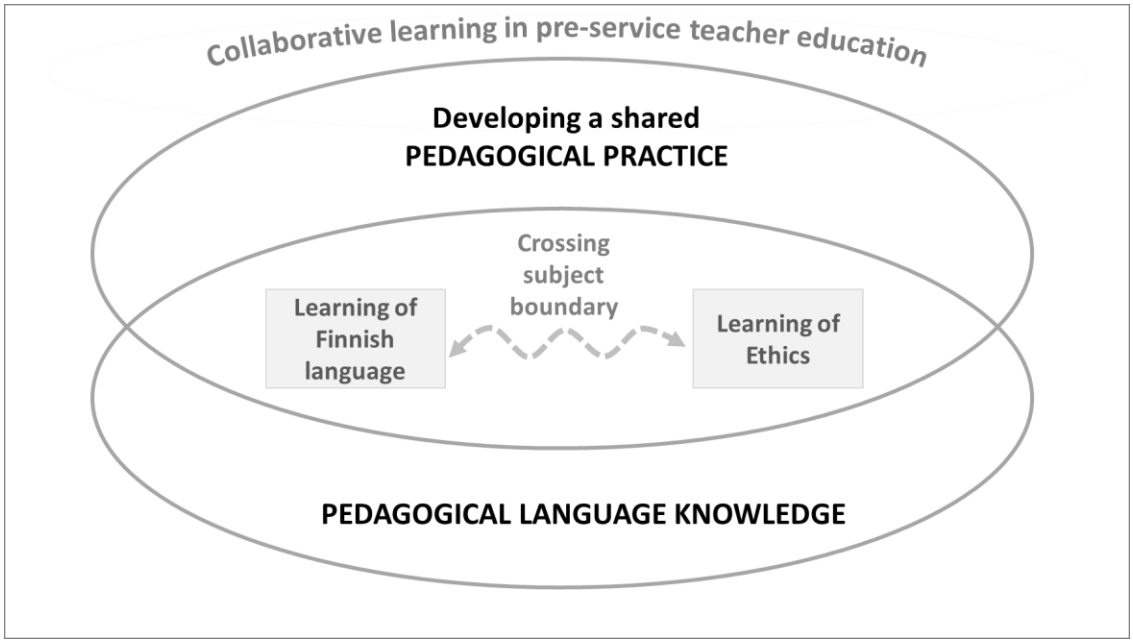


**Figure 1.** The conceptual framework of the present study.

We adopt *collaborative learning* (Dillenbourg, 1999; Vygotsky, 1978) as a concept for understanding *pedagogical practice development* in the context of interdisciplinary *boundary crossing* (Akkerman & Bakker, 2011). In this study boundary crossing refers to how language and content are integrated. Boundary crossing is explored by applying the concept of *pedagogical language knowledge* (Bunch, 2013) in order to examine how student teachers act at the subject boundary of Finnish as a second language and ethics. In this study, the main aim was to better understand student teachers' understanding of the role of language in subject learning, in other words *pedagogical language knowledge,* in order to develop supervision tools that support the learning of all learners. The key concepts and the conceptual framework are elaborated below.

# 2 Conceptual framework

## 2.1 Collaboration in pedagogical practice development

This study draws on Vygotskian sociocultural theory, viewing learning as an intrinsically social phenomenon in which interaction comprises the learning process and language serves as the means for mediation, guiding the internalization of the content and transforming it from the social to individual level (Lantolf & Thorne, 2006; Lin, 2015; Vygotsky, 1978). *Collaborative learning*, rooted in Vygotsky's sociocultural theory (Vygotsky 1978; see also Dillenbourg, 1999), is a widely and often ambiguously used term that refers to a variety of approaches adopted to describe and implement practices of students working with peers towards a shared goal (Dillenbourg, 1999; Orland-Barak & Tillema, 2006; Van den Bossche,

2006). Collaborative practices have been regarded as crucial to professional development because they facilitate opportunities for teachers to create networks that enable them to reflect on and share their practice, reconsider their understanding of learning and teaching, and co-construct new knowledge (Achinstein, 2002; Chan & Pang, 2006).

Roschelle and Teasley (1995, p. 70) define collaboration as 'a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem'. This definition involves consciously aiming to create something new, such as knowledge, solutions, understanding or practices and, as part of that process, learning through interaction. The process of creation is cyclical and iterative and involves ambiguity and uncertainty (Damsa & Jornet, 2016). The outcome of the shared effort is something that cannot be credited to any individual and exceeds what any single participant could have constructed on their own (Kuusisaari, 2014).

According to Dillenbourg (1999), collaborative learning situations are typically perceived as symmetrical with respect to power status, although the group symmetry may change during the process. Participatory roles may constantly shift, but it is essential that division of labour is minimal and participants genuinely work together. This creates positive interdependence and individual accountability between the participants. Dillenbourg (1999) refers to this as a 'social contract' between learners in reaching their goal. The shared goal may partially have been set up at the outset of the project, but as the task is open-ended there is space for negotiation and modification during the process. Negotiation of different standpoints and misunderstandings is central, and it is through this process that participants create something together.

*Pedagogical practice development* refers to student teachers' understanding of learning goals and their design of learning activity sequences accordingly (Cope & Kalantzis, 2015; Mascolo, 2009). This is informed by their pedagogical perceptions and beliefs and shaped by multiple social, individual and institutional discursive relations (Buendía, 2000). Pedagogical practice development has often been connected to the roles given to the learners and the teacher. The Vygotskian approach to learning can be described as learner-centred (e.g. Brown, 2003; Mascolo, 2009), whereas the pedagogical tradition in Finland has rather teacher-centred and textbook-driven roots (Luukka et al., 2008). In the teacher-centred pedagogical approach the teacher aims to control learning and transmit knowledge to the learners, mainly to be memorized (Brown, 2003). The focus is thus more likely to be on the content than on the learning process. The learner-centred approach, on the other hand, shifts the power from teacher to learner and learners become agents of their own learning (Ahn & Class, 2011; Vygotsky, 1978). In the teacher-centred approach learners are treated as a group, whereas in the learner-centred approach learners can work either individually or in groups but their learning needs, strategies and styles guide the pedagogical choices (Brown, 2003).

In this study, student teachers' pedagogical practice is assumed to facilitate both language and content learning and their ability to respond to the challenges presented by learners with diverse interests and backgrounds. In a multilingual group, the pedagogical approach

regulates learners' opportunities to develop their language and literacy skills both as a tool and as a target of learning. By focusing on the student teachers' collaborative thematic advancement, we aim to understand the essential elements of collaborative practice development, how student teachers critically consider their pedagogical practice and understandings, generate a shared understanding of the mutual aim, and strive to develop it further and co-construct new knowledge. When collaborating to integrate language and content learning, student teachers construct their pedagogical language knowledge within subject boundaries.

## 2.2 Pedagogical language knowledge within subject boundaries

Disciplinary boundaries can be defined as 'sociocultural differences that give rise to discontinuities in interaction and action' (Akkerman et al., 2011, p. 139). *Boundary crossing* refers to attempts made to create ongoing, two-sided action or interaction across different practices (Akkerman et al., 2011). It requires going into unfamiliar territories and demands cognitive retooling (Tsui & Law, 2007). If the participants represent expertise from two different disciplines, the collaborative situation is not completely symmetrical. However, knowledge asymmetry and the possibility to work with a more capable peer may facilitate student learning in the zone of proximal development (ZPD) (van Lier, 2000; Vygotsky, 1978). Participants are interdependent when they collaboratively construct a shared practice that goes beyond the subject matter (Lin, 2015) and represents a change in their prior traditions and understanding. Inherent tensions, which stem from sociocultural differences should not be seen as sources of potential difficulty, but rather as sources of deep learning as they force participants to reflect on their practices and assumptions, thus affording opportunities for renewal and developmental transformation (see also Akkerman et al., 2011). According to Akkerman et al. (2011) the aim is not to dissolve the boundary and merge the intersecting social domains by moving from diversity to unity, but rather to solidify continuity of action and interaction when mutually aiming to develop a new in-between practice.

In the context of this study, a pair of student teachers work across the disciplines of Finnish language and ethics in a multilingual and multicultural classroom. The main boundaries to be crossed during their collaboration include the pedagogical and disciplinary traditions of Finnish language and ethics, linguistically and culturally homogeneous classrooms versus multilingual and multicultural classrooms, language and content, and parallel roles as students in teacher education and teachers at an institute. The multilingual and multicultural setting with its built-in disciplinary boundary crossing provides a fruitful space for collaboration and construction of a shared pedagogical practice that goes beyond the participants' customary areas of expertise.

When integrating a second language and a content area, language functions both as a mediating tool and as a target of learning (van Lier, 2000; Vygotsky, 1978). The student teachers' understanding of language is therefore connected with their pedagogical practice development. The concept of *pedagogical language knowledge* refers to the student

teachers' understanding of the role of language, language use and language learning in relation to content studies. Bunch (2013, p. 307) defines the concept as 'knowledge of language directly related to disciplinary teaching and learning and situated in particular (and multiple) contexts in which teaching and learning take place' (for proposed parallel concepts see Aalto & Tarnanen, 2015, 2017; Bunch, 2013; Faltis et al., 2010; Lucas & Grinberg, 2008).

In terms of disciplinary and pedagogical traditions, there is a boundary between language and content teaching. However, from a sociocultural perspective, language and content are intertwined and cannot be detached, as subject knowledge is bound to and verbalized in particular discourse (Cummins, 2001; Gajo, 2007; Mortimer & Scott, 2003; Nikula, Dalton-Puffer, Llinares, & Lorenzo, 2016). The concept of pedagogical language knowledge draws on a distributed view of language (e.g., Zheng & Newgarden, 2012) in which language is not primarily perceived as a linguistic system, but rather as a social constitution that serves to regulate behaviour in real time and in community over time and space (see also *Language as an action*, Bunch, 2013; Walqui & van Lier, 2010). Therefore, teachers' pedagogical language knowledge refers not only to the ability to analyse learners' language skills and disciplinary language use, but also to the pedagogical knowledge and skills for developing meaningful activities that engage learners, facilitate collaborative meaning-making, and stimulate both language and content development (see also Aalto & Tarnanen, 2017; Bunch, 2013; Canale & Swain, 1980). These aspects have an impact on lesson planning as they affect what is taught, how it is taught and who does the teaching.

Prior studies on English as a second language (ESL) teachers' and content teachers' collaborations have focused on, for instance, the power relationships between teachers (Creese, 2002; Mousa, 2012), teachers' perceptions of collaboration (Pawan et al., 2011) or the factors describing successful collaboration (Mousa, 2012). Research recognizes the need to provide interdisciplinary practical experiences and pedagogical models of collaboration between ESL and content area teachers already in pre-service education (e.g. Agyei & Voogt, 2012; DelliCarpini, 2009; Kaufman & Brooks, 1996; Kleyn & Valle, 2014; Tilley-Lubbs & Kreye, 2013). For instance, Kleyn and Valle (2014) aimed to rethink the academic structures and develop a co-teaching model for diverse classrooms across academic boundaries in which pre-service teachers' collaboration was intensively supervised by teacher educators. Interconnections across fields were created and teacher and student learning were increased, but the findings suggested that new approaches are needed for developing inclusive pedagogies that engage diverse students.

This study aims to contribute to the discussion on crossing subject boundaries in pre-service teacher education and developing a shared pedagogical practice and pedagogical language knowledge through collaboration.

# 3 Methods

## 3.1 Research questions

This qualitative case study examines the essential dynamics of the development of pedagogical practice in collaboration when two pre-service teachers plan and enact a cross-disciplinary course of Finnish as a second language and ethics and integrate content and language learning. In this paper, we ask:

- How do pre-service teachers collaboratively develop a shared pedagogical practice within subject boundaries?
- What kind of pedagogical language knowledge does the student teachers' collaboration reflect?

## 3.2 Research context, participants and data

This study is a part of a larger intervention study run by the first author and aiming to understand how student teachers collaborate across subject borders in the context of an independent field practice, and what kinds of supervision practices should be developed for better promoting their joint construction of language-sensitive pedagogical practices. Pre-service teachers do not have, in this particular university, an opportunity to practice in a multilingual group within their regular teaching practice, although linguistic and cultural diversity in subject-specific pedagogical practices are dealt with in their pedagogical studies. To remedy the lack of teaching practice, student teachers are offered an optional practice in multilingual groups of local schools outside the official practice school. However, the supervision of this field practice is not resourced adequately enough to enable the supervisor to closely support the process. Instead, small groups of student teachers work largely independently based on given instructions. Therefore, in this educational context a better understanding of student teachers' collaboration and shared construction of pedagogical language knowledge is needed in order to develop tools for supervision.

In this sub-study, we report on a teaching intervention in which a pre-service teacher team planned and conducted a course that integrated ethics and Finnish as a second language in a multilingual setting. The two participants were Finnish fourth-year student teachers, an ethics and history student teacher (acronym *EthST*) and a Finnish language and literature student teacher (acronym *FinST*). The student teachers were being trained to teach in the nine-year Finnish comprehensive school system, mainly grades 7 to 9 (age 13-16), and in upper secondary school (age 16-19). To qualify as teachers, all students across the curriculum need to complete a Master's degree that includes at least 60 ECTS of pedagogical studies offered by the department of teacher education, where this study was conducted.

The student teachers chose to participate in the teaching practice under study in order to gain more experience of teaching and learning in multilingual and multicultural settings. They were instructed to plan and implement a course that integrated Finnish language and ethics content studies. It was up to them to define the project and generate a practice of their own in a situation where no prior concrete models were at their command. The student teachers chose to implement their course within integration training for adult migrants, given by a private non-governmental institute, and chose to focus on the characteristics of Finnish religious culture. The participating student teachers' status was symmetrical and there was no pre-set distribution of work. The first author of this article facilitated the intervention by organizing the practice and providing requirements and instructions for action. She refrained from interfering in the student teachers' process unless they asked for her help, as the aim was to better understand their own pedagogical approach in order to develop supervision practices in teacher education.

The integration course was optional for the adult migrants and attendance varied from class to class from 3-10 students. The ethics student teacher was, alongside her studies, under contract to the institute in which the intervention took place and had taught the same course previously but without a specific language focus. The course included a visit to a Lutheran church and the topics dealt with ranged from customary religious traditions to values such as religious freedom, and solving ethical problems.

The language of instruction was Finnish. The learners' level of Finnish proficiency varied from beginner to more independent user of the language, i.e. on average, level A1–A2 on the CEFR scale (see http://www.coe.int/en/web/common-european-framework-reference-languages). The learners' language skills were not tested as this was beyond the purpose of this study.

The data consisted of audio-recorded planning sessions (PL) and group interviews of the two student teachers (INTW), video-recorded lessons[1] (L), student teachers' individual diaries (D), and field notes made by one of the authors. The data collection process is illustrated in Figure 2. The planning sessions lasted 15–105 minutes (total 495 min) and group interviews 20–140 minutes (total 285 min). The classroom lessons lasted 90 minutes. The first author conducted the interviews and was present in lessons 1, 3, 4 and 6. The student teachers accompanied each other in the planning sessions.

[1] Lessons 2 and 5 were not video-recorded: lesson 2 was a class trip, lesson 5 for technical reasons.

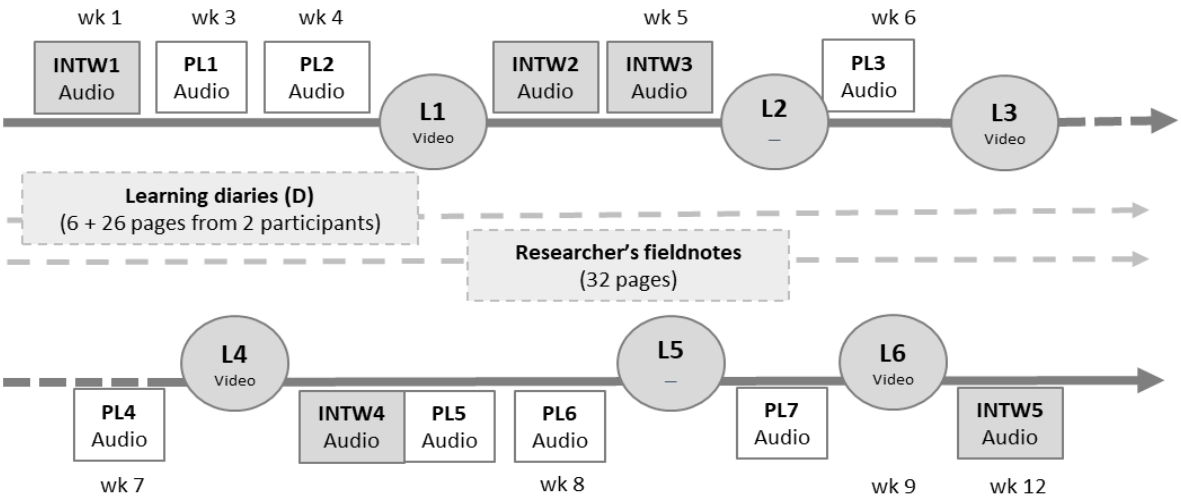


**Figure 2.** Timeline of data collection and data of the intervention. The data from the interviews, planning sessions and participant diaries are referred to in this article.

The anonymized transcriptions of the audio-recordings were coded using the qualitative data analysis software ATLAS.ti. As the main objective was to analyse the meanings attributed to language that the student teachers constructed in collaboration in their talk rather than an extensive construction of the talk itself, more detailed transcription methods were not adopted in analysing the data from planning sessions and interviews.

## 3.3 Analytical procedure

Collaboration is often explored at the micro level of interaction (e.g. Damsa, 2013; Kuusisaari 2013) and in relation to individual learning (Barron, 2003; Meirink, Meijer, & Verloop, 2007). In contrast to this, the focus of analysis in the present paper is on the topical development of the pair of student teachers. Data-driven and theory-informed qualitative content analysis (Hsieh & Shannon, 2005; Patton, 2015) was used to analyse the student teachers' collaboration. The analytical procedure was iterative and proceeded via the following phases:

To begin with, the structure of the data as a whole was analysed by discerning conversational episodes based on their substantive contents. The discussion data were divided into episodes of topic talk by means of data-driven systematic qualitative analysis of the contents (Patton, 2015).

The episodes were then examined in terms of the pedagogical ideals that the student teachers raised in the planning sessions and interviews, the tensions that emerged, and the approaches towards language in a subject learning context or in meaning making in general. It became evident that the student teachers struggled throughout the project between their established teacher-led pedagogical practice and the more learner-centred pedagogical ideal. This tension was therefore selected for more detailed analysis and was interpreted inductively by examining two types of topical episodes: 1) episodes in which the student

teachers critically considered their existing pedagogical practice, and 2) topical sequences in which the student teachers oriented themselves toward transforming their existing pedagogical practice and promoted learner activation, interaction, discussion and participation with each other and with the teachers. The selection of key episodes was done without preconceived categories of analysis. Thereafter, the coding of the key episodes was partly theory-informed as the development of a coding system was initially inspired by the work of Damsa (2013), Kuusisaari (2014), and Popp & Goldman (2016), but the final coding scheme (see Table 1) was adjusted through recurrent data-driven coding cycles and refinements of the approach in line with the research questions of the study. The first author identified the key episodes and coded and analysed the actions. The coding scheme was discussed with the co-authors in light of the various examples from the data. Ambiguities were acknowledged, discussed and, where needed, re-examined.

The student teachers' collaboration in developing their pedagogical practice was also examined across time. Phases in the pedagogical practice development were identified by exploring key sequences and seeking the points at which the student teachers re-formulated their focus and began to outline and structure it in a new way (Kärkkäinen, 1999). This was usually done by bringing a new viewpoint to the discussion, which led to change in defining the focus of the activity.

Finally, in line with the purpose of this study, the student teachers' pedagogical language knowledge within the subject boundary was examined on the basis of their analysis of their existing pedagogical practice and their efforts to generate a new practice in collaboration. This was done by examining how student teachers addressed the key aspects of pedagogical language knowledge: learners' language skills, disciplinary language and pedagogical choices that, firstly, promote student engagement, meaningful activities and collaborative meaning-making and, secondly, foster both language growth and content learning.

**Table 1**. Coding scheme for qualitative content analysis of collaborative development of pedagogical practice.

| **CATEGORIES OF ACTION** | | **DESCRIPTION OF ACTION** | **DATA EXAMPLE** |
|---|---|---|---|
| **MAIN CATEGORIES** | **SUB-CATEGORIES** | | |
| **CRITICAL CONSIDER-ATION OF CURRENT PEDA-GOGICAL PRACTICE** | Reflecting on or analysing the current pedagogical practice | Naming or analysing difficulties that impede the team from transitioning away from their current pedagogical practice | *'we were thinking about discussion that we'd sort of like to have more of it - - but you notice in discussions where there are two who have the upper hand in the language and then one who is really weak that the discussion gets turned away from where the weaker speaker is'* (INTW4: 068) |

| | | | |
|---|---|---|---|
| | Problematizing the current pedagogical practice | Challenging or questioning the current practice | *'they certainly have to ask something, we can't simply lecture throughout the course'* (PL2: 443) |
| **GENERATING A NEW PEDAGOGICAL PRACTICE** | Creating shared understanding | Framing the pedagogical principles and ideals underpinning the current and desired practice and redirecting and reformulating the focus of planning (on a general level, not specific to individual tasks or activities) | *'what if we didn't do things so much all together [as a group], like now we did a huge amount with them just all together -- if we sort of differentiated more -- so that they'd just do some tasks and we'd then go around [the group individually]'* (INTW4: 068) |
| | Generating new initiatives | Bringing in ideas for activities and tasks that can contribute to student activation and engagement | FinST: ***should we have some sort of dialogue or discussion at the end***? (new initiative)<br>EthST: *um, yeah where they'd sort of discuss with each other, I'm just wondering,* ***could they*** (analysis)*, if we had here some of the, um, if they sort of had a go at remembering the names of their own religions - -* ***what if I made another version of this discussion [text] where I could leave out - - this word and leave out this word*** - - (elaboration)<br>FinST: ***yeah or then just do questions like*** *'what are your beliefs?'* - - (elaboration) (PL1: 427-433) |
| | Analysing new initiatives | Evaluating the task or activity | |
| | Elaborating new initiatives | Developing the activity or task idea further | |

In the following section we will discuss our two main findings concerning existing pedagogical practice and the generation of new practice and how pedagogical language knowledge is embedded in practice construction.

# 4 Findings

Over the course of the study it became evident that although the student teachers employed a somewhat teacher-led approach, they at the same time problematized it and tried to move towards a more learner-focused approach. In the following, we describe the student teachers' collaboration in constructing their shared pedagogical practice by

examining, firstly, how they analyse and problematize their existing pedagogical practice and, secondly, how they aim to resolve this by constructing a shared understanding of a more learner-centred approach first on a conceptual level and then on a practical initiative-generating level. Throughout the analysis we will discuss what kind of pedagogical language knowledge their collaboration reflects and how it tended to guide their pedagogical practice development.

## 4.1 Critical consideration of existing pedagogical practice

The two student teachers clearly sought to promote the pedagogical ideals of learner engagement, active participation and autonomy both in their discussion and in the learning objectives they set. However, throughout the intervention they problematized the teacher-centredness of their practice. Their self-criticism focused on the following three key aspects: 1) teacher-dominated talk at the cost of free discussion and the students' prevailing needs, interests and participation, 2) emphasis on vocabulary and difficulties in learning, and 3) the comprehensibility of instruction (Table 2). These concerns reveal the student teachers' pedagogical language knowledge and demonstrate their analytic approach to learner language skills, disciplinary language and pedagogy that promotes learner engagement.

FinST tended to criticize the practice in general terms referring to the teachers' overall role of running the class, whereas EthST's questioning was more specific and encompassed more aspects. Overemphasis on vocabulary particularly troubled EthST, who was concerned that learning new words took precedence over content knowledge. She also questioned whether the learners were able to comprehend the lengthy sessions of teacher-led instruction.

**Table 2**. Key aspects identified in the student teachers' critical consideration of their existing pedagogical practice.

| **Problematization of the existing pedagogical practice** | **Analysis of the existing pedagogical practice** | |
|---|---|---|
| | **Learner-related analysis** | **Teacher-related analysis** |
| - teacher-dominated talk at the cost of free discussion, students' prevailing needs, interests and participation<br>- emphasis on vocabulary and difficulties in learning<br>- the comprehensibility of instruction | - learners' language skills<br>- heterogeneity of the group<br>- difficulty of student activation | - teacher roles as language and content teachers<br>- customary pedagogical approach<br>- tendency to focus on difficulties in learning |

Examination of how the student teachers analysed and named the challenges barring them from transitioning away from teacher-centredness in their practice revealed aspects related both to the characteristics of the learners and their own actions (Table 2). Their learner-related analysis was found to focus on three aspects: learners' limited language skills, heterogeneity of the group, and difficulty of student activation. They both found it difficult

to understand learners' questions (intw2, D-afterL3) and, particularly for EthST, it was difficult to gauge the learners' comprehension skills. The heterogeneity of the group hindered learner activation as they felt that not all of the learners had sufficient language skills for discussing abstract issues. They also found student activation difficult because the learners did not support their weaker peers (intw4) and they preferred individual work over pair work (D-afterL6). Whole-class discussions tended to activate only a couple of learners (D-afterL4).

In the analysis of the existing practice, the identified teacher-related aspects that impeded their practice development can be categorized as 1) the teachers' role as expert in their own domain, 2) adherence to the customary pedagogical approach, and 3) a tendency to focus on difficulties in learning. These aspects are discussed in further detail in light of the data examples. FinST, in particular, frequently emphasized her minor role in conducting the course. The following diary excerpts show how she positioned herself in the context of integrating language and content teaching.

(1) *Can I trust that linguistic matters are naturally interwoven into the different themes so that my teaching can be called language teaching? - - I feel that I definitely have to act according to my own role. When planning the course the content is absolutely the main determining factor. - - it felt stupid for there to be something related to grammar in the course plan. Surely the language focus can be on discussion too – or on something else that comes up.* (Diary_FinST: 045 after PL1)

(2) *It was funny that, especially towards the end of the course, I felt myself to be more of a reporter [of linguistic facts] than a teacher. Bringing a linguistic aspect in to support the content surprisingly often meant just simply plain language. This usually provided the most help and was perfectly adequate. It was even a relief that it was not needed to impose the language aspect with all its own trappings by force: teaching the passive voice within an ethics course would definitely have blown my, EthST's and the students' heads.* (Diary_FinST: 178–180 after INTW5)

Excerpt 1 shows that, for FinST, ethics content has the priority role in the course and that she even positions the student teachers differently: *I have to act according to my own role*. She finds it challenging to analyse the role of language within content learning and perceives language primarily as grammar, although she admits that a linguistic focus can also be set for conversation. In her final diary entry (excerpt 2), FinST clearly concludes that her role was to explain issues in plain language in order to make them more comprehensible. To her, the role of language seems to be reduced to that of a mediating tool without target-oriented teaching and learning of it. Furthermore, she tends to consider the language teacher as subordinate (*reporter*) to the content knowledge teacher (*teacher*). As disciplinary language is perceived according to traditional linguistic premises as a grammatical system (Dufva, Aro, & Suni, 2014), the link with content learning remains weak and the disciplines seem to remain separate without transformation.

In the analysis of their customary pedagogical approach (Table 2), the student teachers expressed that they enjoy talking and occupying the stage when running the class and explaining things (PL3, PL6, intw5). FinST considered teacher-centred practice as formalism

(see e.g. Dufva, Suni, Aro, & Salo, 2011), which in the field of language education is related to grammar orientation, and that considerable conscious effort is needed to break away from the customary teaching approach (PL3). In the final interview, the student teachers chose to watch the video recording of lesson 3 with the researcher and reflect on their action in the classroom (stimulated recall). The participants were frustrated with their constant focus on difficulties in learning and the amount of teacher-dominated talk and lack of student engagement during the lesson, and the researcher asked whether they would consider making some changes to their approach. The following excerpt from that interview shows the student teachers' analysis of their customary teacher-centred approach in relation to the emphasis on vocabulary and the boundary between language and ethics content knowledge.

(3) EA: *- - would you somehow change the amount you speak or*
EthST: *well, that's a good question. Did we have a sort of need to explain things? - -*
FinST: *well, in my view we did need to do some explaining because of the kinds of tasks we were doing, so we should have left out some of the tasks and left space for discussion. But I do think if they are doing a task linking pictures with words the meanings of the words need to be explained. - - but for sure we could have thought of other kinds of tasks that might not have required so much explaining from us*
EthST: *- - if you think of the groups in the Finnish class, did our lesson really differ a lot from a Finnish lesson in terms of the amount of explaining?*
FinST: *- - I don't really know - - there is more explaining here as - - we focused here so much on the words that the students don't understand in the text or, in the Finnish class you can just discuss something without needing to think what each word means and whether it's a strange [unfamiliar] word - -*
EthST: *I think we concentrated too much on new vocab, I don't know, I did wonder if we somehow waffled too much*
FinST: *I don't know about new words or not new words*
EthST: *or then maybe just the whole thing is in some way automatically about new words*
FinST: *I somehow just sort of mean that we really concentrated a lot on the words in the first place because there are so many of them that they don't know in the language. But how else can you deal with the content of ethics? So I don't really know, on the other hand, in a way I don't think in regard to the content we did anything odd*
EthST: *Right right* (INTW5: 321–333)

The student teachers' reflection in excerpt 3 illustrates how their understanding of the relationship between language and ethics resulted in teacher-led practice in the classroom. EthST wonders whether they had a need to explain things and questions the teacher-dominated talk and the emphasis on vocabulary (*we somehow waffled too much - - everything is just in some way automatically new words*) and calls for an opportunity for all learners to communicate their thoughts. FinST intimates that their choice of activities was biased and resulted in too much explaining as the types of activities used required new vocabulary to be described, and that the topics could have been taught using more diverse and activating tasks. She nevertheless justifies the focus on vocabulary by arguing that it is the only way content can be dealt with, whereas in a language class it is possible to discuss issues without knowing the precise meanings of all words. In her pedagogical language knowledge disciplinary language thus seems to be perceived as vocabulary, and learning as

the comprehension of words and texts. This view is contrary to the learner-centred approach in which already comprehensible elements and prior knowledge and skills are a natural and obvious basis for action and the pedagogical thinking draws on the idea of fostering student activation despite limited skills (Walqui & van Lier, 2010). Learning is therefore understood as neither a controlled nor predetermined process.

Furthermore, the excerpt suggests that the student teachers consider that the learners' limited Finnish skills mean that teacher-dominated talk is needed to explain things and that the focus of teacher supervision should be on vocabulary as opposed, for instance, to interaction or reading and writing skills.

It can be concluded that the student teachers' collaborative reflection on their existing practice focused on three main aspects: 1. the learners' limited language skills, which led to a focus on vocabulary and difficulties in learning and prevented the teachers from activating the learners, 2. the customary teacher-driven pedagogical tradition, and 3. built-in knowledge asymmetry when crossing subject boundaries. These findings reflect the student teachers' pedagogical language knowledge as follows. Firstly, they were sensitive to the learners' language skills but perceived them mainly through the lens of insufficiencies and difficulties. Secondly, it was challenging for them to discern the role of language within content learning and disciplinary language was treated mainly as vocabulary and grammar. Thirdly, their pedagogical choices focused to a large extent on how to make teaching comprehensible and their consequent stress on vocabulary demanded teacher-led explaining at the cost of student activation.

In the following, we examine how the student teachers worked to develop their pedagogical practice.

## 4.2 Generating a new pedagogical practice

Two types of pedagogical practice development were identified in the data of the student teachers' planning sessions. At the general level, the student teachers identified the pedagogical principles and ideals underpinning their practice and redirected and reformulated their planning focus accordingly. At the local level, they generated new initiatives by developing ideas for activities and tasks that could support student activation and engagement. The majority of planning time was used for creating and refining individual tasks and activities, but through the meta-level discussion they created a shared understanding and redirected the trajectory of the course. In the following, we first discuss the ways of creating a shared understanding on a more general level and then demonstrate the collaborative patterns behind task and activity generation.

### 4.2.1 Creating shared understanding

A shared goal can only be partially set at the outset of a joint project. Participants will typically have different understandings of the goal at the outset and approach it from their

own perspectives. Collaboration therefore requires that the shared goal is negotiated and revised during the process. Through negotiation, the participants develop a mutual awareness of their shared goals (Dillenburg, 1999). In the present study, four phases were identified in the student teachers' process of constructing their understanding of a shared goal and joint pedagogical practice (see Figure 3).

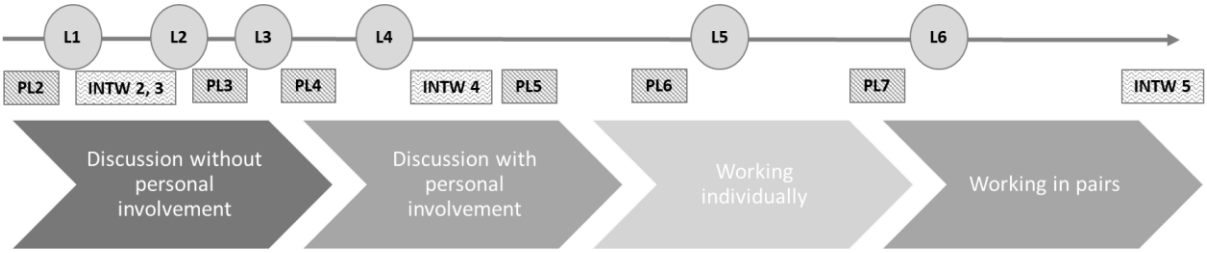


**Figure 3.** The phases of pedagogical practice development and learner activation.

The first phase, *Discussion without personal involvement,* was the longest and spanned the first three lessons. The phase begins with planning session 2, after FinST is informed by a teacher at the institute that the learners in their group are unwilling to discuss religious issues on a personal level. This incident initiated ongoing speculation regarding the learners' willingness to share their opinions and experiences and how to address ethics topics without engaging the learners at a personal level.

Gradually, the student teachers discovered that they had been overcautious and began allowing space for discussion and sharing in the classroom (the second phase *Discussion with personal involvement*). However, class discussions remained teacher-led and only two students in the group were active participants. Thereafter, again on FinST's initiative, they moved on to a new phase in which they promoted *individual working* and activation of prior knowledge and skills. At several points FinST indicated that a lesson dedicated to individual work was needed as a counterbalance to continuous teacher-centeredness: *I'm not sure whether the teachers know how to be quiet and give (the students) space to examine the text independently and make their own conclusions* (PL6_FinST: 1548). Finally, in the fourth phase *Working in pairs*, the task of producing a poster in heterogeneous pairs was set for the final lesson. However, this pair work was also criticised by the student teachers because the learners worked individually instead of in pairs as intended.

The following data excerpt displays the collaborative negotiation in the third phase of pedagogical practice development, particularly the aim to promote learner agency by activating prior skills in individual work.

(4) FinST: *(our aim is) that we don't help all the time. In developing their language proficiency it's good to use more of their own prior knowledge of the language, (so) when reading a long text it's good to (get them to) activate and practice their existing knowledge*
EthST: *but is that our aim? I'm wondering if it's wrong then, if I help them all the time*
FinST: *no no no, but let's give them at least fifteen minutes because we haven't given them any time to do anything on their own*
EthST: *yeah that's true, we have always rushed to help, yes, that's true*
FinST: *- - the first word they don't understand we tell it to them immediately. It doesn't activate their prior knowledge in any way - - (so) when they ask [the meaning of] a*

*word - - we won't help but [tell them to] continue reading. It's not the point to understand every word*

EthST: *yes, right* (PL6: 1462–1480)

In line with the learner-centred approach, FinST aims to highlight the importance of strategic skills and to exceed language skill limitations, but does not propose explicit teaching of the skills. She emphasizes that it is not necessary to understand every word, which may echo the aim of moving from the vocabulary level to the textual level. EthST, in viewing the teacher as a supervisor, does not seem to grasp these points in the beginning, and may not be aware of the approach of teaching strategic skills in language pedagogy. After all, although FinST's aim to promote learner agency through activating prior knowledge is clear, in practice they do not teach strategic skills or supervise the learners in adopting them, but instead leave the learners largely to their own devices.

Shared understanding can be perceived both as a process and as an effect of collaboration (Dillenbourg, 1999). Here common ground is required to be able to perform well together (effect) but also to change the existing pedagogical practice (process). The student teachers constantly construct their mutual understanding of their pedagogical practice and their awareness of the need for change is based primarily on their own analysis of the appropriateness of their practice, although external factors also lead them to reconsider their choices. The pedagogy aspect of their pedagogical language knowledge is revealed as they discuss the underpinning goals of ethics as a subject and frequently reflect on how to make their classroom activities meaningful to the learners. Their avoidance of teacher-centred pedagogy relies primarily on holding classroom discussions on relevant topics, but also on learner activation by providing time for individual work without instant teacher support. However, although they redirect their pedagogical focus four times during the process, they do not engage in any deeper discussion of their shared understanding of learning or how learner agency could be promoted in practice. Their pedagogical language knowledge seems to lack the aspect of support for learner engagement.

### 4.2.2 Generating, analysing and elaborating new initiatives

When developing ideas for activities and tasks that can contribute to student activation and engagement, the student teachers set the learning aims for each lesson only at the end of each session when filling in the lesson plan form. Thus, their pedagogical lesson planning does not start from explicitly set linguistic and content-related learning goals but rather focuses on contents and activities. FinST, particularly, frequently expresses concern in her diary about the linguistic aims, as she considers them to be her responsibility and finds it difficult to define them (see also section 4.1 above). However, in the first interview, they both emphasize broadening the learners' religious perspectives through peer interaction and learning from each other and the ability to talk about religion and values as linguistic aims of the course.

The student teachers' task initiatives for learner activation and the foci of their further analysis and elaboration are summarized in Table 3. The task initiatives with which they

aimed to activate the learners included teacher-led whole-class discussions and pair discussions involving sub-tasks such as verbally sharing information, ideas and opinions or formulating questions based on material provided, as well as working on texts either individually or in pairs.

In their analysis of the task initiatives, the student teachers evaluated their comprehensibility and difficulty in relation to the learners' language skills. The relevance (meaningfulness and usefulness) of each task and the risks it entailed were also weighed up.

Furthermore, five patterns of elaboration of the task initiatives were identified. The student teachers elaborated tasks primarily by identifying and explaining relevant vocabulary (1) and by simplifying the language of the task or material (2). Learner activity was also supported (3) by formulating guiding questions for discussions or providing visual support for comprehension; teacher support was also proposed. Task initiatives were also elaborated by considering better ways of supporting learner activation (4) and by developing the content (5) of the task to better meet the learners' needs and interests. Consequently, the elaboration of the task initiatives was considerably language-related.

**Table 3.** The student teachers' ideas for activities and tasks that can contribute to learner activation and engagement and the foci of their further analysis and elaboration.

| Task initiatives | Focus of analysis of the task initiatives | Patterns of elaboration of the task initiatives |
|---|---|---|
| - verbally sharing information, ideas and opinions<br>- formulating questions<br>- class discussion<br>- pair discussion<br>- pair or individual work on multimodal texts | - **comprehensibility** of the task<br>- sufficiency of students' **language skills** / linguistic **difficulty** of the task<br>- **relevance** (= meaningfulness, usefulness) of the task<br>- **risks** involved in the task | - focusing on **vocabulary** (selecting relevant words and explaining them)<br>- **simplifying** the text, vocabulary or task instructions<br>- providing **support** (guiding questions, visual support, teacher support)<br>- developing learner **activation**<br>- elaborating the **content** of the task |

The following excerpt displays a typical episode of generating, analysing and further elaborating a task initiative.

(5) FinST: *- - should we have some sort of dialogue or discussion at the end?*
EthST: *um, yeah where they'd sort of discuss with each other, I'm just wondering, could they, if we had here some of the, um, if they sort of had a go at remembering the names of their own religions -- what if I made another version of this discussion [text] where I could leave out -- this word and leave out this word --*
FinST: *yeah or then just do questions like 'what are your beliefs?', 'where do you meet?' 'who leads the congregation?' -- and these verbs.*
EthST: *yeah, yes, right, absolutely, and with a partner, yes, right.* (PL1: 427-434)

New initiatives were typically proposed on a rather general level, as by FinST in excerpt 5: ‘some kind of dialogue or discussion’. EthST takes up the idea and first analyses it in relation to the learners' language skills, pondering whether they have the (linguistic) capability to carry out the discussion. She then continues to elaborate the initiative by focusing first on the vocabulary (names of religions) that needs to be activated and then by simplifying the text by deleting difficult words. FinST then pursues the elaboration by providing guiding questions to support the pair discussion. She also emphasizes the importance and relevance of vocabulary (the verbs *believe, gather together, lead the congregation*). It is apparent that the student teachers' perception of the learners' deficient language skills and difficulties in learning significantly governs the development of their pedagogical practice.

In the following excerpt, a task initiative is elaborated by developing the content of the task and by planning how to activate the learners.

(6) FinST: *some sort of discussion activity where they can… where they somehow do something in turns*
EthST: *- - if they sort of discussed what they think about freedom of religion in Finland or if this freedom of religion differs from their own previous experience - -*
FinST: *right, I mean they could talk about it - - but there should be some sort of hook [trigger], and not just say now talk about this*
EthST: *mm, right - - that’s what [one student] asked - - because he thought it was odd that back in Africa - - if one [parent] is a Muslim and another a Christian, the child automatically becomes a Muslim but - - in Finland is the child allowed at some point to choose which they want to belong to - -*
FinST: *- - we could discuss - - yes and not that we ask questions, but that they discuss these issues with a partner. We don’t need to - - ask for answers, they can talk in pairs and then we can tell from the Finnish perspective - - what kinds of questions could we [set] what is freedom of religion? Can a person freely believe in whatever he or she likes?*
(PL4: 414–470)

FinST points out that it is not enough to simply set a topic for discussion, but rather discussion should be triggered. EthST, on the other hand, links the topic to an interest in religious freedom previously raised by a learner in the class. However, the learners’ participation and discussion is not supported beyond this. The above excerpt was followed by a lengthy formulation of appropriate questions that match the learners’ language skills. Adapting the language to the learners’ level of language proficiency took up the majority of planning time, and was the only measure taken by the student teachers towards supporting learner interaction. The topics given for discussion tended to be rather broad and did not require structured interaction to solve an issue, construct knowledge or shared understanding, or come to some kind of conclusion. Discussion was not supported with respect to the subject content or by teaching interaction skills or key phrases to facilitate discussion, despite the student teachers' prior experience that discussions often do not engage more than a couple of students in the class.

These findings reflect the student teachers' pedagogical language knowledge (learners' skills, disciplinary language and pedagogical choices). Similar to their consideration of their current pedagogical practice (section 4.1), in their new initiatives the student teachers again

equated disciplinary language with vocabulary. Furthermore, they were sensitive to the learners' skills and the limited Finnish language skills of the learners became the key focus of the student teachers' discussions. This focus shaped their pedagogy around the need to simplify materials and tasks. Pedagogically, learner support was thus perceived not as the provision of linguistic or content resources for participation, but as the simplification of linguistic material and avoidance of difficulties. This is perhaps to be expected as the context was new to the student teachers and the assessment of learner skills and material difficulty were not yet routinized.

# 5 Discussion and conclusions

In this study, we traced two student teachers' collaboration in pedagogical practice development when integrating Finnish language and ethics content knowledge in a multilingual and multicultural classroom. We examined how the student teachers critically considered their existing pedagogical practice and made efforts to develop towards a more learner-centred approach. Crossing of subject boundaries was examined by analysing what kind of pedagogical language knowledge their practice development reflected. The findings in relation to the research questions are discussed in the following.

The process of practice development was iterative and involved ambiguity and uncertainty (see also Damsa & Jornet, 2016). The student teachers' collaboration reflected predictable inconsistencies, as they were in a cross-disciplinary setting orienting themselves to something new. They had a mutual will to engage and activate the learners in meaningful activities and constantly made multiple efforts to develop more learner-centred pedagogy. However, their talk reveals that their pedagogical ideals did not match their practice and that they were, to a degree, aware of and dissatisfied with this. Based on the analysis, it is evident that despite the clear advocacy of the idea of student activation, the student teachers did not discuss in depth how they perceive learner engagement or what this requires in terms of pedagogical practice. Moreover, it is noteworthy that the classroom activities were designed as a continuum of task types and not planned according to explicit learning or (linguistic) skills development objectives, as the student teachers formulated the goals of each lesson only at the end of each planning session when filling in the lesson plan form. Our analysis suggests that the student teachers were not able to resolve the critical inconsistencies behind their approach because their idea of language and content integration was still developing and, despite their continuous efforts to analyse their practice, they did not seem to have tools for pedagogical development. This tendency may be typical of relatively short-term student teacher projects. The findings of this study are in line with previous research that shows that promoting student collaboration and crossing subject boundaries does not automatically lead to innovative learning and generating new practices or knowledge (Barron, 2003; Kuusisaari, 2010; Meirink, Imants, Meijer, & Verloop, 2010; Tillema & van der Westhuizen, 2006). The student teachers' knowledge asymmetry should ideally form a zone of proximal development (ZPD, Vygotsky, 1978) in which they can scaffold each other's personal development by co-constructing a shared practice (Lin, 2015).

The observed tendencies in pedagogical practice development suggest that the student teachers' pedagogical practice was interwoven with their pedagogical language knowledge, particularly their ways of perceiving 1) learners' language skills and 2) disciplinary language and, furthermore, 3) the pedagogical knowledge and skills needed to develop meaningful activities that engage students in collaborative meaning-making and foster both language growth and content learning. Both in their critical consideration of their existing pedagogical practice and in their efforts to generate more learner-centred activities, the student teachers were sensitive to the learners' language skills but viewed them through the lens of deficiencies and difficulties in learning. They thus did not consider the learners' existing knowledge and experiences as a resource for learning.

The student teachers' difficulty in outlining the role of language in content learning and perceiving the characteristics of disciplinary language seemed to narrow their understanding of disciplinary language to vocabulary, ignoring for instance the discursive and textual aspects of the subject (for similar findings, see also Aalto & Tarnanen, 2017; Creese, 2010; Zwiers, 2006). Language and content tended to remain as separate reified entities and not as a unified process (Dalton-Puffer, 2011) of engaging learners in developing language and content knowledge and skills in a target-oriented way. However, sufficient vocabulary is not enough for participation; instead, systematic development of interaction and strategic skills is needed.

Finally, the pedagogical aspect of the student teachers' pedagogical language knowledge rested on their emphasis on the learners' limited skills and the idea of linguistic simplification of tasks and materials, while support for participation, peer interaction and strategic reading and language use remained low. The student teachers did recognize the need to activate the learners, but this did not lead them to develop ways of supporting learner engagement through cognitively challenging activities or to provide tools for participating in meaning-making (Kibler, Walqui, & Bunch, 2015). Rather, it tended to strengthen their need for teacher control, as the perceived deficient language skills and related difficulties in learning of the learners were taken as the pedagogical starting point and learning became something delivered by the teacher to be internalized by the student. Activities aiming to activate the learners were treated as a change from the normal teacher-centred approach, and interaction more as a technical method than as a social contract (Dillenbourg, 1999).

The findings of this study are also consistent with earlier studies that have shown that in groups of second language learners a traditional, reductive pedagogy in accordance with the notion that language has to be acquired first before it can be used for content learning is often employed (see, e.g., usage-based approach to language learning, Tomasello, 2003). However, a pedagogical approach that focuses on difficulties may constrict pedagogical practice development and the learners' learning. Therefore, many current pedagogical recommendations promote amplifying instead of simplifying content knowledge (Walqui et al., 2010).

There are some challenges to be considered in the evaluation of the study, as the first author was a teacher of the student teachers and responsible for the teaching practice

explored in the study. The aim was to examine the phenomenon of pre-service teacher collaboration across disciplines and not to influence it. Therefore, as is typical of the chosen practitioner research approach (Heikkinen, de Jong, & Vanderlinde, 2016), the researcher's two-fold position was sometimes problematic, as she did not want to get involved in or guide the student teachers' efforts. If asked, she supervised the participants regarding their specific questions. Throughout the research process this two-fold position has been analytically reflected upon and the phases of the research were validated by the co-authors. Furthermore, the student teachers participated voluntarily in the study and were therefore highly motivated; the results might have been rather different if the participating students were less motivated to collaborate and to cross subject boundaries. In addition, the instructions given for the teaching practice are likely to have to some degree guided the student teachers' performance and thinking, and the planning process might have differed without the research setting. Moreover, the course that the student teachers were planning was optional for the learners and, therefore, likely to be more challenging to conduct than obligatory courses in which learners engage better. However, the study throws light on student teachers' mutual process of developing a shared pedagogical practice across disciplines, which is relevant for the development of teacher education.

Presumably, an intervention that requires boundary-crossing across disciplines may even enlarge the disciplinary gap and thus lead in the opposite direction to that intended. In line with many previous studies, in the present study language was perceived even as subordinate to content knowledge and negotiation of the role of language within content knowledge learning thus remained limited (Arkoudis, 2006; Creese, 2002). According to Akkerman et al. (2011), even if participants are able to generate a new practice, it should not be understood as a fusion of two intersecting sociocultural systems. In the pedagogical context of language and content integration the boundaries of disciplinary expertise remain, but it is noteworthy that linguistic analysis of disciplinary language is not straightforward even for language experts. Development of pedagogical language knowledge should therefore be a mutual effort of both language and content knowledge experts.

On the basis of the results of this case study some implications for teacher education can be made. In the context of independent teacher practice where supervision resources are limited, student teachers would benefit from models for both their pedagogical planning and for reflection on their action. This study suggests that longer-term processes along with timely supervision practices and relevant supportive tools are needed to foster productive collaborative learning in teacher education. Supervision mechanisms should provide students with theory-based conceptual tools for examining and reflecting on the process (see also Kuusisaari, 2014). As Dinkelman (2003) pointed out, only a reflective practitioner learns from experience.

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