Estonian Student Teachers' Reflections of Professional Development During Teaching Practice

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Abstract

The experiences gained during teaching practice influence student teachers' professional development. However, little is known about how the student teachers experience their teaching practice of practical school subjects, which focus on the skills needed for everyday life,. This qualitative case study investigates the professional development of four Estonian handicraft and home economics student teachers' during their teaching practice over the last year of master's studies. The data consists of student teachers' learning journals, reflective writings, and semi-structured interviews regarding the student teachers' experiences. The data is analysed by using Herbart's extended didactic triangle. The results reveal that student teachers largely reflect on their personal coping and development during practice and their learning context. We conclude that the individual needs of student teachers during teaching practice need to be addressed to create more meaningful professional development opportunities for student teachers.

Key Words: Student teachers, professional development, school practice, home economics, higher education

Introduction

Becoming a teacher is a complex and challenging process that involves aspects ranging from the acquisition of the knowledge and skills needed for teaching to coping with changing educational practices. This process includes changes at the personal and professional levels (Alsup, 2006; Meijer, de Graaf, & Meirink, 2011). Teacher education cannot prepare student teachers for all possible situations and challenges that may arise in their future teaching careers. However, it is an important stage in providing a basis for continuous professional development (PD) (Villegas-Reimers, 2003).

Teaching practice in schools plays a crucial role in teacher education because such practice enables student teachers to evaluate the teaching profession and their work as teachers (Jyrhämä, 2006; Pöntinen, 2019). Different experiences affect student teachers in diverse ways, and studies show that student teachers' beliefs, attitudes and perspectives change significantly during teaching practice (Meijer et al., 2011; Ng, Nicholas, & Williams, 2010; Tabachnik & Zeichner, 1984). A core element of student

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teachers' learning process is reflection on their experiences, which can enhance PD (Toom, Husu, & Patrikainen, 2015). Despite a large body of previous research on student teachers' PD in various areas (Ulvik, Helleve, & Smith, 2018) – for example, in primary school teaching (Dassa & Nichols, 2020; Körkkö, Kyrö-Ämmälä, & Turunen, 2016) – scholars have paid less attention to how student teachers of practical subject areas, such as handicraft and home economics, describe and reflect on their experiences. The practical subjects in Nordic-Baltic schools focus on the skills needed for everyday life, where cultural traditions play a significant role (Hovland & Söderberg, 2005). The experiences of student teachers studying to be handicraft and home economics subject teachers have not been addressed before, and this article is the first attempt in describing their experiences during school practices. In this article, we focus on how Estonian student teachers in handicraft and home economics reflected on their experiences of PD during their teaching practices in schools. To analyse these experiences, we will use Herbart's extended didactic triangle (Stenberg, Karlsson, Pitkaniemi, & Maaranen, 2014) and the relationships between its elements. Therefore, we posed the following research question: What relationships in student teachers' reflections are emphasised in the extended didactic triangle?

Student Teachers' Professional Development

Teachers' PD is an ongoing process that begins with teachers' initial training and continues across the whole teaching career (Villegas-Reimers, 2003). In educational studies, PD is approached from diverse perspectives. In numerous studies, PD has been connected to learning-related issues, such as how teachers learn, learn to learn, and apply knowledge in practice to promote students' learning (Avalos, 2011; OECD, 2009; Postholm, 2012). Such studies describe PD as a personal, complex, and context-specific process. As Kelchtermans (2004) stressed, PD 'is a learning process resulting from meaningful interaction with the context (both in time and space) and eventually leading to changes in teachers' professional practice (actions) and in their thinking about that practice' (p. 220). Therefore, it may be argued that change is an essential aspect of PD (see, e.g., Guskey, 2002). As Desimone (2009) pointed out, PD stems from 'teacher learning and changes in attitudes and beliefs, subsequently changing teacher practices'. In this learning process, experiences, both formal and informal, play a pivotal role (Villegas-Reimers, 2003). Consequently, it is essential to understand that student teachers in teacher education have already had their own personal experiences directly and indirectly related to teachers during their time as students, which influences their understandings of teachers and teaching (Giboney Wall, 2016; Estola, 2003; Lortie, 1975). The PD process is thus a unique experience and can differ considerably among individuals, even if their situations are generally similar (Czerniawski, 2011). The context-specific aspect of the PD process refers to the diversity of learning environments (Vermunt, 2014), such as the teacher education programme, the

social environment, and the culture of the practice school.

Studies concerning subject student teachers' PD have been abundant over the years (Viinikka & Ubani 2020; Ulvik et al., 2018), for example, in second language (Hamiloğlu, 2017), music (Slotwinski, 2011) and math (Koc, Peker, & Osmanoglu, 2009). However, there is a lack of studies on handicraft and home economics student teachers' PD. The majority of handicraft and home economics teacher studies are concerned with working teachers, and some student teacher research has focused on, for example, the attitudes of home economics students towards practical teaching experience (Kozina, 2016), but such research has been conducted in general areas of teaching, without addressing subject-based practice experiences. At the same time the current nature of home economics is valuing general everyday knowledge more than just cooking skills (Höijer, 2013), and therefore it is important to know what student teachers experience during teaching practice. Such knowledge is needed to improve the ongoing PD of student teachers of specific subjects, thus also improving the teaching of the subject in schools.

In stimulating student teachers' professional development, the concept of reflection has been identified as an essential factor in student teachers' learning experiences (Meijer, de Graaf & Meirink, 2011; Loughran, 1996). Many insights about the nature of this concept exist in the scientific literature (see Rogers, 2001), and from the perspective of a student teacher, it can be seen as meaning making process of approaching teaching to develop a better understanding of teaching and learning to teach, leading to the development of professional knowledge (Loughran, 2002). At the same time, it is important to point out that the development of reflective skills is a process for the beginning teacher and the reflection can differ in degrees and types of emphasis (Zeichner & Liston, 2014).

Teachers' Professional Development and the Didactic Triangle

When considering PD in relation to teachers' practice, one useful framework is Herbart's didactic triangle and its relationships between its elements, which have been used to describe the teaching-studying-learning process (Kansanen & Meri, 1999). The didactic triangle consists of the following core elements: teacher, student, and content (Toom, 2006) that create three relationships: pedagogical relationship between teacher and student, didactical relationship between student and the content, and a content relationship between teacher and the content (Zierer, 2015). From a teacher's point of view, in a pedagogical relationship, teacher seek to foster the best in their students by helping and appreciating them and pursuing to promote their growth (Toom, 2006). The content relationship refers to the teacher's competence in a subject area and the didactical relationship involves the teacher facilitating and orchestrating the conditions in order to promote the students' learning. As Kansanen and Meri (1999) point out, the didactical relationship is the core of the teaching profession (Figure 1, arrow

in the middle), as teacher is creating the conditions to master the subject.
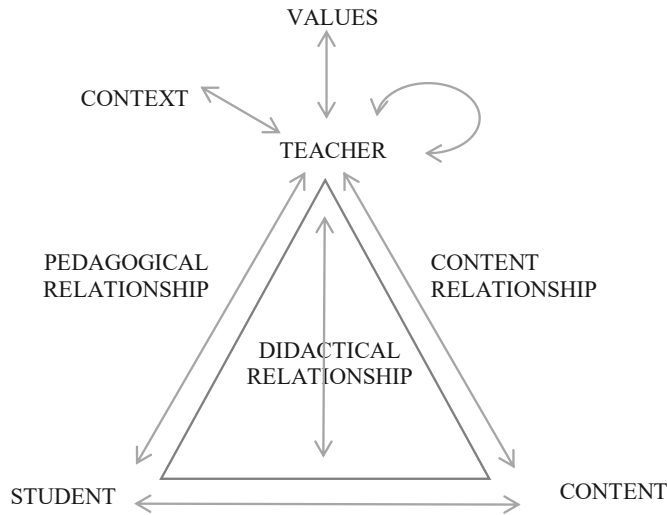
Figure 1. Relationships in the extended didactic triangle (cf. Stenberg et al., 2014)

However, the described triangle does not reflect all aspects of a teacher's work, such as the context in which the teacher works; therefore, scholars have proposed the extended triangle (Stenberg et al., 2014) as a suitable framework for examining the connections among the different elements of teachers' PD (Figure 1). The relationships added to the initial didactic triangle are as follows: teachers' relationships with themselves, which involve reflections on one's own understanding of teaching and on being a teacher; relationships with wider issues, such as the values related to the teaching profession; and the fact that teaching is context bound as Timperley (2008) indicates the teacher's work in the classroom is strongly influenced by the wider school culture and society in which the school is situated.

PD involves experiences and changes in these various relations, which illustrate the essential dimensions in teachers' everyday work.

Methodology
The research context

In Estonia, to enter a master's programme for subject teachers, students need to have a bachelor's degree, preferably in the subject or field to be taught, or equivalent qualifications such as previous diploma (Paas, 2015). Subject teacher education lasts for two years, consisting of 120 European Credit Transfer and Accumulation System credits. Although teacher education at the master's level at Tallinn University (TU) relies heavily on theoretical studies, practical components are also compulsory. In

subject teacher studies at TU, one fifth of the credits are earned via different practice-related courses.

In the first year of teacher studies, to create a better theory-practice connection, practice-related activities include observations of teacher work and partial teaching work in schools (called as 'practicums'). During the second year, students have to complete two school practices (the so-called 'basic practices'), which involve students taking on full teaching responsibilities. In this study, we focused specifically on these practice periods. In handicraft and home economics, each of the two basic practices lasts for six weeks (Paas, 2015).

Student teachers' school choice involves certain conditions. For the practicum, the school must be chosen from a list of proposed practice schools, but for teaching practice, students can request the schools that they are currently working in or plan to work at as well as schools closest to their places of residence. In the context of Estonian teacher training, it is important to point out that the study groups of subject teachers in universities are mostly small. For example, in the handicraft and home economics area, the average size of a student group is 5-10, differing from year to year.

Participants and data collection

This qualitative case study was conducted as part of a project exploring student teachers' PD during their teacher studies. In the present article, we focus on student teachers' second year of study. The participants (n = 4) were second-year teacher education students at the master's level in handicraft and home economics at TU (age distribution = 24–45 years). The small number of participants is due to the small study group in the field and the reason that one student dropped out of the study due to time constraints. The teacher students were the same as we studied during their first study year (Koppel & Palojoki, 2021). However, due to drop out we could follow only these four students.

The data were collected over one academic year (2018–2019) via several methods to provide an adequate overview involving various angles. We mainly collected the data via student teachers' learning diaries (Moon, 2006) to record students' experiences during their first and second teaching practices. In the current study, we treated the learning diary as a tool for reflection and encouraged the student teachers to focus on their thoughts, feelings and experiences during lesson planning, preparation and teaching as well as after the lesson. Recording such experiences immediately after they occur provides better descriptions of the recalled memories (Nezlek, 2012).

Most participants provided their diaries in digital form; however, one student preferred to write the diary by hand. We converted the handwritten diary to digital text. In the end, we collected 141 pages of written diary entries.

In addition, we collected the student teachers' self-analyses before and after their first teaching practices. Such prior analysis, or 'prework' as Moon (2006, 135) de-

scribed it, allows student teachers to develop an appropriate mindset for the course, which, in our case, was the teaching practice. The instructions encouraged student teachers to consider their expectations and personal aims for the school practices as well as evaluate their potential strengths and weaknesses in teaching work. Evaluations after the practice enable looking back at the experiences and directing the aims and expectations for the next teaching practice. The length of the analyses varied from one to six pages depending on the student, adding up to a total of 24 pages.

At the end of the practice year (June 2019), we conducted semi-structured interviews (Cohen, Manion, & Morrison, 2007) to allow the student teachers to reflect upon their experiences during their teacher studies and to orally complement the written diaries. Interviews with the participants were held at the university. We transcribed the interviews using a speech transcription system for Estonian speech (Alumäe, Tilk, & Asadullah, 2018). The machine-created transcriptions were corrected by the first author while listening to the interviews repeatedly. The transcriptions were 7–22 pages in length (Times New Roman, 12 points, line spacing 1.5). Across the data, 216 pages of text were compiled altogether during the study.

Ethical considerations

The first author was employed at TU for the duration of the study, aware of their dual role as researcher and teaching practice supervisor. Personal contact with the researcher and the development of informant friendships may be one stimulus encouraging participation in the study, resulting in closeness during fieldwork (Nowak & Haynes, 2018; Owton & Allen-Collinson, 2014). In order to minimize the effect of the teacher-student power relationship, the students who chose to participate in the study were not given any special benefits. The teacher students were acquainted with the purpose of the study and were informed that they could withdraw from the study without any consequences. Written consent was provided by the students.

Throughout the entire study, we followed the formal ethical regulations of the Finnish National Board on Research Integrity (2019), adopted by the University of Helsinki. To achieve the confidentiality of the participants, their names were replaced with pseudonyms to conceal their identities. However, as Pickering and Kara (2017) have discussed in their paper, in such a small community as our studied group, the participants may still be recognisable to insiders; therefore, ensuring total anonymity is possible only in relation to those outside the community. Awareness of this fact was confirmed by the participants of the study.

Data analysis

This study is based on a case study method which enables to get an overview of the phenomenon in a certain context it occurs (Yin, 2003). In our case the focus was on the narrations of Estonian handicraft and home economics student teachers' experi-

ences in the context of everyday school life during teaching practices.

The collected qualitative data was analysed using deductive content analysis (Elo & Kyngäs, 2008), wherein data was coded according to a categorisation matrix originating from the salient relationships in a teacher's work as presented in extended didactic triangle (Figure 1). In the analysis process, the connections with a total of 6 categories were searched from data: Teacher relationship; Practice relationship: content; Practice relationship: didactical; Practice relationship: pedagogical; Context relationship and Values relationship. To facilitate the process, the data were entered into Atlas. ti (Version 9) qualitative data software. After the preliminary coding process, the first author enlisted a colleague for the peer review of the analysis process to discuss the appropriateness of the relations coding in Estonian. Following the discussion about the coding process and outcomes in English, the authors of the article found it necessary to address some parts of the text more thoroughly. This meant reviewing together the coded data for achieving consensus within the group of authors.

The pre-defined categories consisted of the relations of the extended didactic triangle; the descriptions of the categories and examples of the data are presented in Table 1.

Table 1.

Overview of the analysis: categories, descriptions, and examples of the data

Categories	Description of the category	Quotation examples from the data
1. Teacher relationship	Student teachers' perceptions of themselves as teachers	Piret, before the first practice: "As a teacher, I definitely have to learn to speak in front of the class because I feel insecure. This is the main thing I miss the most at the moment."
2. Practice relationship: content	Understandings of the subject matter taught in the school	Piret, the first practice: "The teacher must prepare the food herself according to the recipes beforehand, it is not enough just to read them or trust the opinion of others."
3. Practice relationship: didactical	Organising pupils' studying and learning processes	Maria, the first practice: "I moved around the class all the time myself and tried to come to the students and help if necessary. I realised that it helped the students keep up with the pace."
4. Practice relationship: pedagogical	Pedagogical interactions between the student teacher and the pupils	Kadri, the first practice: "I see that in fifth and sixth grades, children are not yet mature enough to really think about who they are, what motivates them, and how to make learning interesting and effective for themselves."
5. Context relationship	The surroundings / environment in which the student teacher acts	Kadri, the second practice: "I really liked the handicraft class, it was a bit cool, but everything else was right, it looked like a place where handicrafts are made and beauty is valued – students' work on the shelves and walls; tools, books, magazines are visible and accessible."
6. Values relationship	Student teachers' fundamental teaching matters related to equality, fairness, and the like.	Piret, before the first practice: "Today, the learner is important; the teacher is rather a guide and a supporter."

Findings

In this section, we present the specific cases of the four student teachers' experiences relating to the relationships in the extended didactic triangle at different phases of the teacher studies (before, during and after the first teaching practice; during the second teaching practice; and after teacher studies).

Case 1. Piret was a student teacher who had some experience as a substitute teacher in a comprehensive school in the capital area of Estonia. Therefore, her results were representative of what it means to be a teacher and survive teaching situations. The main relationship that emerged in her prework was the teacher relationship, as she had many questions for herself (e.g., 'How will I manage?', 'How will I motivate students?') before the practice. During the first practice, she focused on coping (the teacher relationship) in relation to the context and feeling more confident in teaching handicraft, while in home economics, she worried about her adaptation to supervising teacher's style of teaching (as the teacher was conducting recipe-based cooking lessons, and she wanted 'to handle subjects differently than the supervising teacher'). After the practice, she discussed several relations, specifically the teacher and didactical relationships which confirmed that she successfully coped with teaching the subject and motivating the students. To feel more confident in teaching home economics, she notes that 'the teacher must prepare the food herself according to the recipes beforehand, not enough just to read them or trust the opinions of others'. This is related to the stressful situation of 'managing in the study kitchen'.

At the end of the practice, she wrote, 'I also understand that the university cannot prepare me for everything. Because of the situations that are in the school ... I noticed in the practice that you can't learn such things anywhere, it's not possible, because all students are different, and all situations are different. That, in fact, is somewhat scary'.

During the second practice, she reflected on teacher relationships in relation to context relationship: Piret felt 'confused' and 'anxious' at first, being at a school that was 'completely different' from regular schools and had some organisational issues. She called it 'survival in difficult circumstances'. Gradually, during the practice weeks, she adapted to the system, treating the challenges posed by this environment as 'a good learning opportunity'. In her final interview, she focused mainly on the context relationship, worrying about whether the subject is not valued in society and in the schools; moreover, she mentioned the teacher relationship – that is, her experiences and further developments. She was 'motivated to go and work as a teacher' and 'to bring the new and contemporary methodologies to the classroom'.

Case 2. Kadri was a teacher student who had no teaching experience before the practice. Therefore, in the self-analysis before the practice, she worded her concerns concerning teaching as 'jumping into unknown water' and emphasised the teacher relationship, focusing on herself and questioning her own suitability for the task. During the practice, she was primarily concerned with the teacher and pedagogical relation-

ships, and her challenge involved motivating the students to like the subject. Her attempts reflect both 'frustration and panic', but also successes in which she acknowledges that 'all is not yet lost'. Her student-centred methods stimulated students' minds and she felt successful, but the supervising teacher worried about deadlines. She had to adapt to the students and to the environment: 'I had a lack of skills to handle situations where students are in the classroom because they must be there, not because they want to be there'.

After the practice, she reflected on the teacher relationship, which involved learning aspects, self-consolation ('It's ok what I achieved') and surviving the intense period. 'One thing I missed throughout my school practice was time. Time was short and that made me nervous. The pace was too intense at times, or I took on too much myself'. She saw the need to take more time to make sense of the required actions. During the second practice, the pedagogical relationship came up as Kadri focused on her individual approach to students, encountering both successes, such as good contact with students, and failures, mainly concerning students' motivation. She noticed that 'if you make the technique to be learned a little easier for the students, it should be more feasible for them. I hope that they will then experience success and that their interest will grow instead of shrinking'. In the final interview, she focused on teacher studies (the context relationship) and herself as a teacher (the teacher relationship). 'In practice, I think one of the biggest problems is being there for a short time and just driving in with your ideas, topics, etc. into someone else's work. This means you can't do what you really want, and the real teacher is worried about their own plans and actions. It sets boundaries and hinders you'.

Case 3. Triin had previously studied teacher education and worked as a teacher but in another area. Having been a teacher before, she had certain expectations and aims before the practice (the teacher relationship). During her first practice, she focused mainly on didactical relationships, as she had set high standards for herself, spending hours on lesson preparation and describing the preparation for lessons as 'awfully long, with hope that it's going to get better over the years'. Practice experience shows that she had the tendency to overestimate students, pointing out that 'students need help' and that they are 'insecure'. Moreover, Triin had doubts about herself (the teacher relationship) and mentioned needing constructive feedback from a supervising teacher. After the practice, she discussed successes in teaching (the didactical relationships) as well as some shortcomings, pointing out areas for improvement (the teacher relationship). She stayed in the same school for another internship 'because of the familiar environment'. She wanted to perform at the maximum level (the teacher relationship) during the second practice as well and mentioned practice-related relationships, mostly the pedagogical relationship, focusing on students' individuality, as 'the children's manual abilities are very different'. During this period, she had to teach sewing; as she is 'not particularly good in sewing', she spent a large amount of time

preparing these lessons. During the practice, she greatly appreciated the support and help of the supervising teacher. After the studies, she reflected on the context relationship and stated that she did not feel confident about becoming a teacher at this stage of life (the teacher relationship).

Case 4. Maria was a young student teacher with no experience in the teaching area. As she did not know what to expect, she overlooked many relations, such as expectations for oneself (the teacher relationship), some aspects regarding the subject (the content relationship) and how to teach (the didactical relationship). During the first practice, didactical relationships predominated: she had many ideas on what to do differently in her teaching and faced many challenges in managing the classroom. The students' motivation and their need for continuous and individual help was something she highlighted: 'Two more children, I can't get them to work. I can see that one of them understands the scheme, but she is not motivated to do her job'. Instructing the left-handed students was also a challenge: 'I wanted to show her how to crochet with the help of a mirror, but since there was no mirror in the class, I took my left hand and started crocheting. […] In the end, we somehow managed, but it took a lot of time'. She found the home economics lessons particularly difficult, as everything was 'too intense' in practical lessons. 'Theoretical lessons are easier because they can be better prepared'. She also reflected on these aspects (the didactical relationship) after the practice. During the second practice, she kept questioning what and how to teach and how to approach the students (pedagogical and didactical relationships) and faced many challenges, such as the use of language and students' attitudes towards the handicraft subject, as students did not bring tools with them for class and were unmotivated to perform tasks. After the studies, she mainly concentrated on the general process of teaching studies (the context relationship). Her reflections about the teacher relationship revealed her strong desire to become a teacher and to develop herself continuously.

Discussion

This study examined reflections on the experiences of four handicraft and home economics student teachers during their teaching practices while undergoing initial teacher education. Previous studies have shown that teaching practices are an important part of teacher education because they enable student teachers to integrate their personal approaches with the demands of the professional contexts (Beijaard, Meijer, & Verloop, 2004).

Although the learning experiences of each student teacher are different (Mutton, Burn, & Hagger, 2010), we can point out the main characteristics that the student teachers of handicraft and home economics reflected on in terms of the teaching-studying-learning process. We used Stenberg et al.'s (2014) extended didactic triangle to understand how the different aspects of teachers' work are emphasised in student

teachers' practice experiences and thereby to gain a deeper understanding of their PD during teaching practice.

The shared experiences of the student teachers in the current study were notably related to the teacher relationship, with the student teachers focusing on themselves in terms of their feelings, self-management, challenges, and successes during the teaching practice. In the practice situation, student teachers become aware of their teaching-self (Tang, 2004) and develop an understanding of themselves as teachers. Considering student teachers' personal experiences and understanding them in relation to what meanings student teachers make of their experiences would be useful for constructing more meaningful PD opportunities for student teachers.

The relationship of context was also significant, which shows that many experiences during the practice produced an important impression of the school community and the learning environment of the taught subject. More diverse experiences were achieved by conducting practices in different school environments – for example, when students changed schools for both practices. The results support, for example, Kagan's (1992) study, according to which the influential aspects of the teaching context are the school students, relationships with supervisors and other teachers at the school, availability of materials, and others. The last item implies the handicraft and home economics context, due to the practical nature of this subject, where the physical learning environment and tools are essential. Subject teachers, who are also practice supervisors, need to be aware that, via their choices of what knowledge and practical activities, resources, and experience to express, they also promote certain values and attitudes (Dewhurst & Pendergast, 2008). These attitudes are noticed by student teachers and may affect their perspectives on the subject. The influence of supervising teachers is critical for student teachers' PD (Moosa & Rembach, 2020) in school practice and enables student teachers to combine the theoretical aspects acquired in the academic area and the practice acquired in the school in a way that responds to contemporary pedagogical and subject challenges (Janhonen-Abruquah, Posti-Ahokas & Palojoki, 2017; Höijer, 2013; Benn, 2012). Similar challenges can also be found in other subjects. The results of Bartolome's (2017) study describe, for example, the philosophical differences between the music student teacher and the supervisor, where the understandings of academic education collide during teaching practice with those of a supervising practitioner who has worked in the field for many years. Therefore, this aspect can be highlighted as a topic that student teachers may encounter during school practice, regardless of speciality.

The experiences in teaching practice also broadened the student teachers' understandings of the student-teacher interaction (pedagogical relationship) and the importance of supporting students' learning process (didactical relationship) as improvements in the pedagogy instruction, i.e., management, sequencing, and clarity, as also recognised by Bartolome (2017). Experiencing different situations and reflecting on

them creates more self-knowledge, which is a basis for coping with unexpected or demanding professional situations in the classroom (Stenberg & Maaranen, 2020). Interestingly, our data reflected many challenges regarding the student teachers' individual approaches to students, which demanded a lot of time and energy, in line with the results of previous teacher studies (Paas & Palojoki, 2019). With little experience and a desire to do their best both in preparing for and conducting the lessons, the intensive workloads of handicraft and home economics teachers, due the practical nature of the subject, were seen as a challenge by the student teachers. Student teachers developed an understanding of students' abilities and skills, e.g., the challenges of teaching different handicraft techniques to left-handed students. These skills can be learned only through personal hands-on teaching experience during teaching practice. In addition, the student teachers found it difficult to teach students who had no interest in the subject. In this study, it was clear that the student teachers wanted to produce activities that would make the handicraft subject pleasant for all students participating in the lesson. Therefore, the student teachers treated the subject of handicraft as a pleasant activity whose main aim was to encourage students' capacities to work with their hands.

From the practice side, the content relationship was not emphasised as heavily; however, both handicraft and home economics were emphasised, as the student teachers had opportunities to teach both. The relationship least reflected upon was values, which shows that the student teachers who participated in the study focused mainly on the personal, contextual, and teaching aspects.

In our research, we found that student teachers' experiences during teaching practices were very multifaceted and subjective. Therefore, reflection on these experiences is needed for noticing the different challenges related to teaching and for their PD. Similar to Toom et al.'s (2015) study, student teachers are able to notice several areas of concern and opportunities for development in their practice as well as numerous opportunities for their professional learning. At this point, universities (teacher training institutions) also need to support ways to introduce different reflection opportunities, either individually or in student teacher groups. The extended didactic triangle (Stenberg et al., 2014) that was the basis of our data analysis can also be used as a tool to reflect on teacher's work, and it can provide support for both the student teacher and supervisors to notice which relationships emerge during different periods of teaching practice.

Our study has a several limitations. Overall, the sample of participants was small, and handicraft and home economics is a context-dependent subject, meaning that our results may not be generalisable to all countries.

In terms of methodology, our data collection methods enabled us to gather rich data about the feelings, thoughts, and experiences of the student teachers during their teaching practices. Although the diary was supposed to be reflective, the majority of the text was descriptive and exhibited a low level of reflexivity. Gelfuso and Dennis

(2014) indicated that pre-service teachers demonstrate low levels of reflection and claimed that when left alone, student teachers remain within their own novice understandings of teaching and learning, even when support structures (e.g., guiding questions) are provided. This conclusion emphasises the importance of supportive roles, such as teacher educators in the university and supervisors or mentors in schools. Put differently, there is a need for a knowledgeable other, as development is attained via influence from supervisors and/or peers in what Vygotski called 'zone of proximal development' (Wood & Wood, 2009).

Looking at the analysis process, it can be seen that the didactic triangle is a helpful tool for seeing what areas of PD need to be emphasised more. For example, without conscious effort, values-related questions may remain poorly reflected upon, as student teachers focus on themselves and practical coping rather than the general moral and ethical aspects of the teaching profession. The need for encouraging in-depth reflection is supported by other studies (e.g., Karatepe & Yılmaz, 2018). Further research is needed to examine more closely the elements of the extended didactic triangle at the beginning teachers' careers to evaluate differences and focus on specific areas of PD. In addition, other forms of analyses, such as documentary analysis method, may be considered to discover about PD during teaching practice.

Conclusion

The results of this study show the importance of the practical experiences of student teachers in allowing them to open up and reflect on different aspects of teacher's work during teaching practice as they become future teachers. With the help of the extended didactical triangle (Stenberg et al., 2014), we identified that student teachers focus on their own coping in the school environment, but they also take on different challenges related to different aspects of teaching, e.g., coping in pedagogical and didactic relationships while developing their own professional learning. Therefore, teaching practice is an ultimate learning space for developing an understanding of teaching and the subject itself, and it should also create numerous opportunities to reflect on the experience. This calls for flexibility in the organisation of teaching practices to ensure that each student teacher can gain experience beneficial to their individual PD needs. As teacher educators, we can encourage student teachers to use their teaching practice experience as an opportunity to take responsibility, reflect on their development as teachers and make their own decisions about who they want to be as teachers.

In conclusion, we want to emphasise the individualisation of teaching practice, acknowledging the nature of the subject, and understanding the value of the time and space needed for reflecting on the experiences gained. Each student comes to the teacher education with different background and experiences. Therefore, teaching practices should create conditions to reflect on professional skills and teacher work, and to critically assess the contents of the lessons as compared to contemporary cur-

ricular goals. Here, cooperation between the student and the university supervisor is important to provide support for coping in different contexts. Professional development does not end as teacher education ends. The challenge remains how to encourage the continuous professional development of newly graduated teachers to reach their full potential as teachers.

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