

# What and how student teachers learn during their practicum as a foundation for further professional development

By

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### Abstract

This study investigates how work placement contributes to the integration of practical skills and theoretical knowledge in teacher education. The lack of connection has commonly been criticised in teacher education as well as in other professional studies. The aim of the study is to gain a deeper understanding of how practicum interacts with the university coursework to enhance professional competencies among student teachers. The context is three different Norwegian teacher education programmes that prepare for secondary school. In focus groups the students describe the placement context and the differences between learning on campus and in the practice field. Furthermore, they explain the outcome of field experiences. The findings show that the learning in practicum should not be taken for granted. The students experience great differences between workplaces related to attitudes, support, facilities, mentoring and possibilities to learn from experiences. Practicum should be recognised as an important part of student teachers' education. It should not be left to chance, but have a binding framework related to the quality of mentoring and the working conditions student teachers are offered.

**Keywords:** practicum, work place learning, on- and off-campus learning, teacher education

### 1. Introduction

University-based professional studies take place in two learning arenas, the university and the practice field, something that creates a need for transferring learning from one context to the other (Eraut 2004). Education programmes are, however, often criticised for not being relevant to the professions, and for a lack of coherence between practice and theory (Korthagen 2010, Kvernbekk 2012); 'theory' is here understood as the university coursework. The practicum part is highly valued by the students, who often claim that the practicum is where they learn most (Korthagen 2010, Bogo, 2006).

The current study is part of the research project 'Together for better learning', a collaborative project involving programmes in which students are educated for a variety of professions such as medicine, music, aqua medicine and teaching. In this study we investigate what and how *student teachers* learn from practice placements and what can be learned from these experiences in order to facilitate the development of professional knowledge and a starting point for further professional development. 'Professional knowledge' is defined as knowledge that draws on theory as well as practice (Clarke et al. 2013, Grimen 2008). The context of the

study is three different Norwegian teacher education programmes that prepare students for teaching in secondary school. However, the study might be relevant for all programmes that include a practical component.

The aim of the study is to understand how practice interacts with the university coursework to enhance professional competencies, defined as the ability to use professional knowledge and skills in the workplace (McNamara 2013, p. 184). In some contexts professional competencies are based on measurable standards, but in this paper understood in a more general sense.

The main research question is:

*How can work placement contribute to the integration of practical skills and theoretical knowledge?*

In order to answer this question we ask:

*How do student teachers describe the context of their practicum and the learning conditions offered there?*

*In what ways do student teachers' learning experiences in practice differ from on-campus learning?*

*What and how do student teachers learn in their practice placement?*

## 2. The role of practice placement

### 2.1. Practice placement in professional education

Several studies of higher education advocate the need for bridging the gap between on- and off-campus learning (Bogo 2006, Matthew et al. 2012, Edwards et al. 2004). Work placement is one of the remedial actions supposed to link the two arenas and thereby increase the relevance of the educational programmes and facilitate the transfer from on-campus learning to professional practice (Matthew et al. 2012, Edwards et al. 2004). In the practice part students experience the complexity of work and are exposed to the socio-cultural aspects of workplaces (Trede and McEwen 2015). The benefits from work-based experiences are, however, not obvious, but depend on how the students reflect on their experiences and how they relate what they learn in the academic context to work (Smith et al. 2007). Reflection involves more than describing what has happened and thinking it through. It is a contextual processing activity either related to imagining a way forwards or a conscious attempt to learn from what has happened in the past (Klemp 2013, Korthagen and Vasalos 2005). In order to

move beyond one's own understanding it is necessary to bring in something new, like theoretical concepts or seeing reflection as a joint activity (Nerland 2006). Practice placements and the university coursework are different elements in developing professional competence. However, through reflection the two arenas might interact. It is thus important to ensure that placements support a reflective approach to the profession (Matthews et al. 2012, Trede and McEwen 2015).

While there has been a demand for work-ready graduates, focusing on employability when combining academic studies with practice placements has also been criticised (Jackson 2015). A strong emphasis on making graduates work-ready runs the risk of vocationalising university courses by tailoring them to exclusively meet employers' needs (Trede and McEwen, 2015). Preparing for work is only one mission in higher education. Cultivating critical thinking is another and a prerequisite for questioning and improving what happens in a workplace. Workplace learning is therefore not an alternative to on-campus learning, but complements it (Jackson 2015).

However, there is no easy connection between explicit, codified knowledge, knowing that, and practical knowledge, knowing how (Duguid 2005, Eraut 2000). Furthermore, Polany (1966) claims that to all knowledge there will be a tacit contribution. Thus, transferring knowledge involves more than transferring codified knowledge. While explicit knowledge can be shared, tacit knowledge is displayed or exemplified and might involve face-to-face interaction (Duguid 2005).

Eraut (2000) distinguishes between implicit learning, reactive on-the-spot learning, and deliberative learning. At one extreme Eraut puts implicit learning, at the other deliberative learning. Implicit learning, meaning knowledge acquired without being conscious about what is learned. It can thus be difficult to transfer the knowledge to new situations. Deliberative learning is planned and thereby directed forwards. It involves mental processes and a vocabulary for talking about one's experiences. Reactive learning is near-spontaneous and unplanned. It takes place in response to recent, current or imminent situations. From our point of view, students need to generalise their knowledge in order to transfer it to new contexts. Furthermore, they should be able to plan for the unknown. Accordingly, they need both reactive and deliberative learning, learning that does not happen by itself but depends on consciousness, reflection and imagination. However, learning from experiences takes time, and shortage of time might force people to adopt intuitive approaches and to follow

accustomed patterns of thinking (Eraut 2000). We see deliberative learning as the most complex type of learning because it requires building on previous experiences and developing the learning further through imagination.

## 2.2. Practice placement in teacher education

In teacher education different understandings of teacher learning can impact the intentions and expectations for practice teaching. Cochran-Smith and Lytle (1999) distinguish between three conceptions of teacher learning that involve different perspectives on knowledge: 1) knowledge for practice, 2) knowledge in practice, and 3) knowledge of practice. Based on the first perception, teachers need knowledge developed by experts that they can apply in their classrooms. This is primarily a matter of theory and knowing that. From the second perspective teachers first and foremostly need practical knowledge, knowledge embedded in practice and in teachers' reflections on practice. From this perspective practice and knowing how play the most important roles. From the third perspective one does not distinguish between formal or explicit knowledge and practical knowledge. According to this perspective professional development occurs when teachers develop situational knowledge and a disposition of inquiry. Doing this in a community of practice they should also move beyond their local settings and connect their work to broader social, cultural and political ideas (Cochran-Smith and Lytle 1999). The interaction between academic and practical knowledge brings us to the concept 'the third space' which is a metaphor for the hybrid space where practice and academic knowledge are brought together and new knowledge is developed based on the two perspectives (Zeichner 2010). In the current article, professional knowledge is understood in line with Cochran-Smith and Lytle's third conception of teacher learning. This conception is described as *inquiry as a stance*, an attitude, as we see it, that reflects Eraut's (2000) notion of deliberative learning.

Imagining a way forwards is not always easy. Sometimes teachers find themselves in situations where neither theoretical knowledge nor practical experiences can guide their actions. In these situations they can draw on practical wisdom (Eisner 2002). What counts as *being wise* is, however, hard to pin down and open to debate. Following Eisner (2002), practical wisdom is a result of reflection and deliberation with others. Eisner compares teaching to playing jazz, as being a matter of knowing when to come in and take the lead and when to bow out. There are frameworks and norms that have become part of the performer's tacit or practical knowledge, but artistry requires more than this; it requires sensibility, imagination, technique and the ability to make spontaneous judgements and decisions on the

spot. These aspects of artistry are not matters of rule, but of feeling (Eisner 2002). In order to develop artistry in teaching, student teachers should be encouraged to improvise and move beyond tradition and habits.

Artistry cannot be copied; individuals have, within certain frames, to develop their own voice. This process can, to use a concept from Biesta (2009), be called 'subjectification'. Biesta draws a distinction between three functions of education: *qualification*, *socialisation* and *subjectification*. Pupils should be guaranteed, *qualified* teachers with knowledge, skills and understandings that enable them to act as teachers. In that respect new teachers should to some degree be employable when they finish teacher education. However, being qualified does not mean that student teachers need to manage everything by themselves. Through *socialisation* in the workplace teachers become part of the profession and get access to knowledge embedded in the community. While socialisation is a matter of being part of a profession, *subjectification* is not about being included in the existing order, but a matter of being able to make one's own judgements and act independently.

Summing up: Education serves different functions, and practicum offers knowledge and skills that can complement the university coursework. However, being educated as a professional teacher involves more than being part of the current system. It is also a matter of being able to question practice, to learn from experiences through reflection and deliberation with others and to plan for the unknown. For this to happen, and to prepare student teachers for their profession, practicum should be more than practical experiences in a workplace.

### 3. Methodology

In the collaborative project, of which this study is a part, we agreed upon three main themes that we wanted the students to discuss in focus groups. The themes were 1) the placement context; 2) the difference between learning on campus and in the practice field; and finally 3) the outcome of field experiences.

The sample in the current sub-study is 21 self-selected students from three different teacher education programmes at two universities in Norway. One programme is a five-year integrated teacher education programme that leads to a master's degree, and two are one-year postgraduate programmes for academic and vocational teaching, respectively. All the programmes (here referred to as the integrated, the academic and the vocational programme) educate secondary school teachers. Teacher education in Norway is regulated by national

framework plans. There are several similarities among the programmes, but they are not identical. By including participants from different programmes, we hoped to get a maximal variation sample (Creswell 2012).

We conducted focus group conversations with one group of students from each programme. The three researchers and authors of this article were responsible for one focus group each. The conversations took place just after a practice placement; the first long-period placement in the integrated and academic programmes, and the second in the vocational programme. For the integrated programme the practice placement took place in lower secondary school this term; for the other programmes the practice placement took place in upper secondary school. The conversations were audiotaped and transcribed.

In focus groups the diverse points of view may, through interaction, yield more than the sum of the individual points of view. The method is especially suited to examine experiences, attitudes and beliefs (Barbour and Kitzinger 1999). A first level of coding followed the main themes in the study, but we also searched for themes the students brought up. The data were subsequently analysed following an interpretative approach conducted through a moderation process between the researchers (Hatch 2002). We aimed to reveal the variety of perceptions of relevance and ways of learning. Cross-units perspectives are presented in the discussion section. We also arranged workshops together with our collaborators from other professions. Here we presented and discussed data from the various sub-projects and thereby enhanced our understanding.

### 3.1. Context

In Norway, as in other countries, teacher education is often criticised for being fragmented and not relevant (Finne et al. 2014). The dissatisfaction with the education seems to be growing, and there is a perceived gap between what student teachers expect and what they get (Finne et al. 2014). While the criticism is usually directed at the university coursework, we wanted to focus on the practicum and how practice placement can contribute to interaction between the two learning arenas in teacher education. One reason for examining the outcome of practicum is that it seems to be taken for granted. The student teachers find practicum more useful than the education they receive at the university, and in the national framework plans the requirements for the practical part are only related to quantity, not to the quality of content or mentoring.

Before presenting the results, we will describe the programmes that are included to facilitate the understanding of the findings.

### 3.1.1. Programme 1) The five-year integrated teacher education programme (the integrated programme)

Students in the integrated programme typically enrol when they have finished upper secondary school and are about 19 years old. They start their university education with the intention to become teachers, and over the course of five years they are educated in subject 1: their major subject, subject 2: their minor subject, and in professional studies that consists of pedagogy, subject didactics and practicum. The professional studies constitute, all in all, one year's worth of 60 study points (ECTS) that are distributed over the first four years of the five-year programme. The last year is dedicated to working on the master's thesis. The students have short placements each autumn for the first three years of the programme. These placements mostly consist of observations. In their fourth year the students have two eight weeks periods of placement. During these weeks they are also supposed to attend to their discipline studies at the university.

During the practice periods they are mentored and assessed by school-based teacher educators, hereafter called 'mentors'. They often have two different mentors in each placement period, one for each of their two teaching subjects. Some of the mentors have formal mentor education of 30 ECTS; others do not. The mentors are chosen by their school leaders. Since it is difficult to find enough placements, there are few or no possibilities to be picky about the mentors. During their long-period placements the students are visited twice each term by university-based teacher educators, who also supervise and assess the students. In the end, the university is responsible for the final assessment of the practicum, but the assessment is done in cooperation with the mentors, whose judgement is decisive. The assessment categories are *pass* or *not pass*.

### 3.1.2. Programme 2) The one-year postgraduate programme for academic teaching (the academic programme)

To get into a one-year postgraduate programme in academic teaching students need to have either a bachelor's or a master's degree (from 2019 the requirement will be a master's degree). A typical student is older than 25 years, is an experienced student, and will sometimes also have work experience. Some are quite motivated for teaching; others want to improve their curricula vita by obtaining a teacher education certificate even though they never intend to become teachers (Roness and Smith 2009). Still others do not know how to



use their education from the university and more or less coincidentally end up in teacher education. As a consequence, the group is varied when it comes to age, motivation and experience.

The students in the programme are followed up in the practicum in the same way as the students in the five-year programme. However, they have only two long practice periods, and no short-period observation practice. During practicum there is a break in the coursework at the university. The students can therefore concentrate on their practice teaching, though exams at the end of the term still create a pressure to do academic work.

### 3.1.3. Programme 3) The one-year postgraduate programme for vocational teaching (the vocational programme)

The students in the one-year programme for vocational teaching are educated as teachers in different vocational programmes. Before they start teacher education they hold a certificate of completed apprenticeship, and will also have work experience from their respective vocations. In order to recruit vocational teachers, students in this group are allowed to start teaching before completing part-time teacher education over the course of two years. In order to get a permanent position in schools they have to complete their teacher education within three years. This arrangement means that students in the programme are often mature people with many years of experience in the occupation they are going to teach. Working as teachers during the programme, they are allowed to have one part of their practicum in their own workplace. As such, they will have one practice period in a familiar setting together with people they know as colleagues. Furthermore, and contrary to some of their mentors in school, they often have recent experiences from the vocation they teach, which makes them up-to-date experts in their fields. The academic part of the programme is more or less similar to the one-year programme for academic teaching. Having chosen a second career as teachers, these students tend to be motivated for teaching. However, starting a new occupation and at the same time becoming students can be challenging for people who might not have previous experience with academic studies.

## 4. Findings

The findings presented here follow the themes developed in the collaborative project and respond to the research questions presented in the introduction. First, we address the issue of placement context and the work conditions the student teachers were offered. Then we go into

how the students perceived learning on campus versus learning in the practice field. Finally we present their main outcome of field experiences.

#### 4.1. The placement context and learning conditions

Even if all the student teachers enjoyed the practicum, the differences between workplaces related to attitudes, support, facilities, mentors and possibilities to learn from experiences were repeatedly brought up.

Noticeable differences were found between how different students experienced being included in the workplace, as these quotes from the integrated (1) and the academic programmes (2) show:

I thought I would be more included and feel like part of the staff (1).

Just after a week – maybe only a few days – you were part of the staff. You could sit down anywhere and talk to anyone (2).

While some students were asked about their opinions and were treated as colleagues, others felt like substitute teachers or even as pupils. In many ways the students from the vocational programme (3) regarded themselves as being on equal terms with their mentors. ‘It went very well, since my mentor and I learned from each other,’ one of them said. It is, however, the students’ practical experiences and vocation knowledge that were perceived as a resource and not their educational theoretical knowledge. Mentors seemed not to ask for theory.

How the students perceived being included was related both to the mentor and the staff as a whole, but it was also affected by facilities. One student tells:

I was offered a desk to work at like the other teachers, and together with the others, which was nice. I felt a sense of belonging from day one [...] I wanted to learn more about how it is to be a teacher, and I think I have to some extent felt what it is like (1).

Some schools could offer students places to prepare their lessons together with the other teachers; other schools did not have any extra space to offer. Being exposed to the socio-cultural aspects of the workplace (Trede and McEwen 2015) seems to enhance the experience and give a feeling of the professional role.

After many years as pupils, student teachers implicitly know what teachers do (Eraut 2000). However, teaching is different from talking about teaching or observing teaching. The students from the integrated programme did not perceive their short period placements as being beneficial, since these placements consisted mainly of observation. One needs to participate in teaching to know how it really is, they claimed.

The placement experiences seem to a large degree to depend on the mentors. All the focus groups had a lot to say when it came to mentors:

I had two different mentors; one who gave me freedom but also made good suggestions, and another who left me to myself (1).

The one I had the second year was interested in me as a human being and was not as strict as the one I had the first year (3).

Based on what the student teachers describe, mentors had different attitudes towards and beliefs about practice. Some mentors have a tendency to tell the students what to do; others leave the students more or less to their own trial and error. A third group promotes dialogue, and encourage and support students to try out different ways of teaching. Mentors in the first group tend to promote fixed standards for good teaching. Those in the second group seem to believe that learning to teach is done through own trial and error. Those in the last group present teaching as something that can be done in various ways and find it beneficial to discuss and draw upon various perspectives. The students in the vocational programme, in particular, emphasised that they ought not to be treated in an authoritarian way. With their practical experiences they saw themselves as resources.

Having access to different kinds of practical knowledge seems essential: 'They know a lot that we don't know about, and it is so great to have access to that knowledge' (1). Some students appreciate differences between mentors insofar as it gives them a variety of examples of teaching; others ask for more guidelines and clarifications of the teaching role.

Sometimes the mentor is too eager. 'I got too much mentoring. It was there all the time. I felt surveyed,' (2) one student said. Large differences in personality between the students and mentors were also raised as a challenge. In such cases, students sometimes felt pressured to teach in other ways than they wanted to teach: 'I felt that he tried to make me like him' (1).

Since autonomy is regarded as part of being a professional (Hargreaves 2000), we asked the student teachers to comment in particular on the degree of freedom and responsibility they were given during their practice period. This question also relates to Biesta's (2009) conception of subjectification. All the students wanted freedom; some more than others. On the one hand they want to try something out, and some even prefer 'being thrown in at the deep end' (3). On the other hand they do not want to be left totally on their own, and appreciate suggestions from the mentors. Some students were given a large degree of responsibility; others were controlled more closely and problematise the lack of power they have as students. The students' experiences indicate that mentors are different, but, based on what the students told us, mentors should also consider differences among students. Identities, backgrounds and experiences influence the way student teachers relate to their practice (Crawford-Garrett et al. 2015).

#### 4.2. Learning on campus versus learning in the practice field

The knowledge student teachers acquire in practice is bodily and related to emotions, while on-campus teaching involves a more cognitive approach to learning:

You can see the whole mechanism, things that I didn't see when I went to school (1).

When you *read* about pupils with diagnoses you become engaged, but I do not *feel* inadequate as you might do in practice (1).

During their teaching practice the student teachers are allowed 'backstage' and 'get pegs on which to hang theory'. In the workplace they learn by doing. Even if the practicum is highly valued, the students also appreciate theory. Theory provides them with alternatives and might explain why things are done in a certain way. It is among the students in the academic programme we find the most positive views on theory:

The theory is a kind of cognitive resource for situations that are expected and that are not expected (2).

Theory should be allowed to be theory. There needs to be a room for theoretical reflections that are not disturbed by practice (2).

Several students in the academic programme have completed their master's thesis, and might be more familiar with theory than the other students. However, even for students in the academic programme practicum seems to be the more important part of teacher education:

It's only at the university that theory is something in itself [...]. In the end you learn by doing. You learn to drive a car by doing it. You cannot learn to drive only by being tested on theory. That would have been extremely dangerous [...]. You will always continue to learn as a teacher. As they said when we got our driving license – to continue the driving analogy – the piece of paper is only a message saying that you are allowed to train by yourself (2).

The quote expresses that learning to teach is a practical matter. Teaching needs to be developed continuously. Theory is necessary, but not sufficient.

Especially in the academic programme, the students want practice to be emphasised more heavily. They spend many weeks in the practice field; however, although it is compulsory, it gives no academic credit points in Norway. They have to pass their practicum, and most of them do. The graded assessment is based on their exam at the university. 'If I manage to combine theories and write a good assignment, does that show that I'm a good teacher?' (2) one of them asked. However, to be graded on the practicum by any other measure than pass/not pass could lead to enormous pressure, another commented.

Learning in practice is perceived as different from learning at the university. There are many impressions that make the situation more complex than the situation on campus. Encountering practical challenges, the theory can be perceived as being too vague. However, practical challenges can also create an interest in reading theory. 'What I read at the university often seems distant, but now it is interesting to read because now I understand what it is about,' one student said (1). Being in a workplace requires, furthermore, more activity than being on campus. 'In practice the brain is drawn in two directions,' a student in the academic programme claims. He has to prepare for exams in pedagogy and subject didactics and at the same time be a dedicated practice student who prepares good teaching for the pupils. Practice, more than campus learning, involves high-risk challenges. The students in the integrated programme, who have had school visits every year, said that it is only when practicing themselves that they learn whether they are suited for teaching and can see the connections between theory and practice:

To sit at the very back in a classroom one week once a year haven't given me very much when it comes to connecting theory and practice. Experiencing how it is at an earlier stage would have been very useful for me.

In their practicum the students have to do things they have never learned about, and may fail completely. They even appreciate high-risk situations:

You find yourself in the middle of a situation and are forced to think it through. One reason why I appreciated scary situations was that I had to stop and think: ‘What am I supposed to do now?’ (1).

The scary situations seem to trigger reflection. One has to imagine a way forward, what Eraut (2000) describes as ‘deliberative learning’.

The students in the vocational programme, who work as teachers during teacher education, also find it difficult to transfer knowledge from the university into practice. Everything seems so simple in the books.

In the books you can read about the perfect way of teaching and that your teaching should be adapted to all the students, but the books do not say anything about how difficult it is and how many hats you must put on during a lesson (3).

The students find it useful, however, to write assignments. Then they have to elaborate on and repeat what they have learned and connect practice with theory. The assignments seem to strengthen the reactive learning (Eraut 2000). One even said: ‘I transfer what I learned in the practicum not only into my work, but it has also made me become a different person.’

Our findings show that learning on campus and learning in the practice field offer different learning experiences that complement each other. However, it can be asked whether these experiences are utilised and connected as well and as far as they could. To connect the two fields, some kind of processing is needed.

#### 4.3. Outcome of field experiences

After being pupils for years, the student teachers are still surprised by what they learn in their work placement, especially how demanding and time consuming the teaching profession is. In all the programmes the students describe a steep learning curve. In practice they experience learning in a broader sense than what is possible on campus:

I’m left with the impression that I actually can manage a class. That is an experience I have never had beforehand. In the observations I had a presentation for 20 minutes, but that was a

prepared presentation. But to lead a whole lesson and have the students listen to you, that is the most important experience I've had (1).

I agree that seven weeks gives you enough time to go from being insecure to thinking that this is interesting, this is fun. Now I feel safe (2).

I've recently had a practice period in my own workplace and now I see it from a new perspective (3).

The knowledge achieved in the practicum is personalised. The student teachers learn about their own practical skills; they learn something about what is important, and their previous perspectives might be challenged. While the students in the integrated and academic programmes emphasised practical knowledge and knowing how, the students in the vocational programme experienced that what they achieved at the university enabled them to see their workplace in a new perspective.

Even if the two learning arenas are both appreciated, they are usually described as disconnected. However, there are some circumstances where practice and theory seem connected. Challenging situations, assignments and conversations related to practice can promote reflection:

It's not easy to link the theory to practice, because there are so many things to think about. But when the teacher educator from the university visited, he made me aware that I had used theory when I planned the lesson and that I managed to use theory. That gave me more self-confidence (1).

This example seems like an exception more than a rule. Student teachers, furthermore, often appreciate focusing on knowing how.

In our data there are no explicit examples of how meetings among student teachers, mentors and university-based teacher educators are utilised as a 'third space' where practitioner and academic knowledge are brought together (Zeichner 2010). What happens in the practicum seems to strengthen the view of practice and theory as two different worlds that are only to a limited extent connected. A student said: 'It never happened that the mentor said: "How can we connect this situation to the university coursework?"'(1). There are also examples of disagreements between people from the two fields:

It is strange to experience that the teacher educator from the university says: 'Do not only stick to the textbook,' and the mentor says: 'Stick to the textbook; that's what the pupils learn and that is what they use' (2).

Disagreements like the one above do not seem to be discussed among the parties involved, and are thus not used for learning purposes.

The students suggested establishing a closer connection between the practice field and the university. Furthermore, the university should make sure students have access to good mentors. Even if the practicum is highly valued, some of the students in the vocational programme state that there can be too much practice, and that it might feel repetitive. Their experiences show that there is no format that fits all students in teacher education.

## 5. Discussion

In the discussion we will pay attention to our overall question: How can work placement contribute to the integration of practical skills and theoretical knowledge? Teaching is a complex endeavour and can never be reduced to predefined skills or learning how. Everything a teacher needs to know cannot be learned during teacher education. Providing student teachers with tips and good advices might seem relevant in the short run, but not in the long run. Teaching can always be discussed and improved upon, and teachers must learn to handle uncertainty (Kemmis 2010, Lindqvist and Nordänger 2006). The students agree that when learning to teach, both practice and theory are needed, a view that is supported in the research literature. On the one hand there are parts of teaching that need to be experienced and felt. On the other hand theory can offer a critical perspective by challenging taken-for-granted assumptions, explaining what happens in practice and providing alternatives (Kvernbekk 2012).

Illeris (2015) claims that all learning involves three dimensions: the cognitive, the emotional and the social. While on-campus teaching seems to appeal to the cognitive dimension for our informants, experiences in their practicum also involve the emotional and social dimensions. Thus, the two arenas have a potential for complementing each other and offer students a broader set of competences and more holistic learning. However, the student teachers seem to support the critique against the ability of current teacher education to link the two arenas. Work placement does not bridge practice and theory by itself; some kind of processing is necessary. In our study challenges that triggered reflections, conversations in which practice



was discussed in light of theory, and assignments that connected the two arenas were examples of connecting processes. The students, as in other studies, regard the practicum as the most valuable part of teacher education (Bråten and Ferguson 2015, Schultz and Manduzuk 2005). Theory as an interpretative framework is valued less. It is experiences from practice that make it easier to understand theory and make the theory become more meaningful. General knowledge (knowledge for practice) needs to be translated to the specific context, and practical knowledge (knowledge in practice) needs to be challenged. To relate these observations the three conceptions of teacher knowledge presented by Cochran-Smith and Lytle (1999), the student teachers seem to agree that either knowledge in practice or knowledge for practice is sufficient. In some situations there are no obvious solutions, and one has to imagine a way forwards. Education should therefore provide different kinds of knowledge.

The overall contribution of education is expressed through Biesta's (2009) concepts *qualification*, *socialisation* and *subjectification*. The three concepts can, as we see it, be used to guide the university coursework as well as the practicum part. However, here we focus on the practicum. Firstly, education provides *qualified* teachers, and, considering the pupils' needs, student teachers have to expect some kind of control and assessment; mentors can thus not leave the students completely to themselves. Secondly, student teachers should be *socialised* into the teaching profession. The students find that practice placements give them access to a part of teachers' work that has previously been invisible to them. However, in our study how well the students were included in the workplace varied, and as a consequence their learning outcomes varied as well. Some schools appear more forthcoming than others when it comes to including student teachers. When being treated as part of the staff, student teachers get access to what is going on in the school both inside and outside of the classrooms. From what the students tell us, the differences between schools cannot completely be explained by practical issues – they also experience different attitudes in their placements. Based on our findings, a high quality placement should be a collective responsibility for a school. Thirdly, to learn to be able to make their own choices and to act without being told what to do, student teachers need some space to develop their own voice, or for *subjectification*. Some students wanted freedom to decide for themselves more than others. Other students felt insecure as newcomers and wanted guidance. Different needs should be considered accordingly. An aspect that might work against independence and promote instrumentalism in practice is the time pressure and the fact that students are

subjected to assessment. Here the mentor has to balance between qualification and subjectification.

With regard to the learning outcome of the practicum, the mentors play a crucial role. They define the degree of freedom and support the students receive, and also influence how students are included in the workplace and thereby get access to a variety of experiences. In the literature, mentoring is described as different from teaching (Bullough 2005). From the perspective of our study mentoring looks like a private endeavour. Cooperation among mentors could secure a more coordinated practice for students. Furthermore, research supports the idea that formalised mentor education might develop mentors' understanding of mentoring and contribute to a mentor community (Ulvik and Sunde 2013). Even if student teachers appreciate having mentors with different styles and claim that such differences enhance their learning, they still expect some common guidelines. The conditions the student teachers in our study meet in practice, as well as the way they are given support, seem more or less to be a matter of coincidence.

Professional knowledge presupposes a continuing interaction between practice and theory. Integration needs active processing and conscious guidance. For that to happen it is not enough to observe teaching, something the students have done for years. Trede and McEwen (2015) argue that early placement can enhance opportunities to link the university coursework with practice. It can enable students to question practice and trigger reflection. The integrated students' experiences support the idea that to benefit from practice and to get pegs on which to hang theory, they need to practice themselves. An argument against early work placement is that students do not have sufficient discipline-specific knowledge and skills to participate meaningfully, and that they can be seen as a burden in the workplace. However, even if students have limited knowledge of their disciplines, they can still take on some responsibility or take part in co-teaching.

The three teacher education programmes are directed towards different groups of student teachers, and it seems reasonable to offer a variety of routes into the profession to attract diverse groups of people to meet different needs. It is for example important to recruit people with certificates of completed apprenticeship to teaching. Vocational teachers can often identify with pupils in the vocational programmes and can meet the pupils in a better way than teachers in academic subjects are able to do. Still, one might ask if it is sufficiently challenging for students to have parts of their practice periods in their own workplace with

colleagues as mentors. For these students theory seems to be an eye opener, but we see it as crucial that the students at least in one of the practice periods benefit from experiencing a second workplace.

## 6. Conclusion

Based on the study we see some implications for teacher education. Both practice and theory are needed and should cooperate and complement each other. Teaching has a practical orientation and thus requires practice. Becoming a teacher, furthermore, involves being included in a profession and getting a feeling of being a teacher. Teaching also implies considering alternatives and to have an inquiring approach to practice, something to which theory can contribute. However, to benefit from the two learning arenas and to offer student teachers a comprehensive education they can draw on in their further career, we see it as crucial to promote students' reflection and provide them with varied experiences that support their qualification, socialisation as well as their subjectification. In that case, the experiences they make during their practicum cannot be left to chance or be seen as beneficial in themselves. The practicum is more than training. In order to start developing professional knowledge it is necessary with processing activities, which imply quality mentoring, being part of a working community and experiences that promote reflection. Then the practicum, as well as the university coursework should have a binding framework and demands not only related to achievement, but also related to the quality-assurance of the work-placement as regards the quality of mentoring and the working conditions of the students.

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