Student Teachers' Strategies in Classroom Interaction in the Context of the Teaching Practicum

Lauri Heikonen (corresponding author)
Faculty of Educational Sciences, University of Helsinki
P.O. Box 8 (Siltavuorenpenger 10), 00014 University of Helsinki, FINLAND
lauri.heikonen@helsinki.fi
Tel. +358 50 3688008

Prof. Auli Toom
Centre for University Teaching and Learning
Faculty of Educational Sciences, University of Helsinki
P.O.Box 9 (Siltavuorenpenger 1A), 00014 University of Helsinki, FINLAND
auli.toom@helsinki.fi
Tel. +358 50 4154852

Prof. Kirsi Pyhältö
Faculty of Educational Sciences, University of Oulu
Yliopistonkatu 9, 90014 University of Oulu, FINLAND
Research Director, Faculty of Educational Sciences, University of Helsinki
P.O.Box 9 (Siltavuorenpenger 5A), 00014 University of Helsinki, FINLAND
kirsi.pyhalto@helsinki.fi
Tel. +358 50 4150132

Prof. Janne Pietarinen
School of Applied Educational Science and Teacher Education, University of Eastern Finland
P.O. Box 111 (Yliopistokatu 2), 80101 Joensuu, FINLAND
janne.pietarinen@uef.fi
Tel. +358 50 4650642

Dr., Research Director, Tiina Soini
School of Education, University of Tampere
Virta (Åkerlundinkatu 5), 33014 University of Tampere, FINLAND
tiina.soini@uta.fi
Tel. +358 40 1901753

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Abstract

Strategies student teachers employ in classroom interaction with pupils during teaching practice periods are surprisingly understudied, considering that the teaching practicum provides a central arena for student teachers learning to become teachers. This study investigates the primary strategies student teachers utilised in classroom interaction and the multiple qualities of these strategies. The data were collected from 31 student teachers during their teaching practicum through stimulated recall (STR) interviews focusing on challenging and empowering critical incidents that student teachers chose from their video recorded lessons. The results showed that in challenging classroom incidents, student teachers applied predominantly reactive behavioural strategies, whereas in the empowering situations, student teachers primarily employed proactive cognitive and behavioural strategies. Use of proactive cognitive strategies was typically associated with positive meaningful experiences; hence, they setting the stage for utilizing a more diverse set of proactive strategies in the classroom. Implications for teacher education programmes providing student teachers authentic learning opportunities that promote proactive strategies are discussed.

Introduction

Teaching practicums are shown to constitute a central context for student teacher learning (Ahonen et al. 2015; Mattsson et al. 2011; Saariaho et al. 2016). They provide student teachers an arena in which they can apply what has been previously learned, integrate theories and practice and test innovative strategies; by doing this, they deepen their understanding of the complexities of working in the classroom (Caires and Almeida 2005). Prior research on teaching practice, in fact, suggests that student teachers often lack sufficient strategies for regulating and managing classroom interaction; they tend to focus on themselves rather than on their pupils (Claessens et al. 2016; de Jong et al. 2013; Fuller and Bown 1975).

Teaching practicums often evolve around learning how to make and execute lesson plans. Student teachers have also reported that their knowledge, skills, self-efficacy and flexibility in interacting with pupils increased during teaching practice periods (Caires et al. 2012). It has been suggested that using multiple, profound and flexible classroom strategies leads to empowering professional experiences in the classroom (Soini, Pyhältö, and Pietarinen 2010). However, the skilful use of multiple strategies is not easy or self-evident. Student teachers are shown to experience frustration and uncertainty, particularly when unexpected classroom events interfere with their careful planning (Mattsson et al. 2011). They are also shown to struggle with the complexities of classroom interaction even after they graduate and enter the profession (e.g. Le Maistre and Paré 2010). The findings imply that there is a need to gain better understanding of the strategies that student teachers employ in classroom interaction to be able to design optimal learning environments for learning how to manage, regulate, adapt and respond to diverse classroom situations with pupils during teacher education. However, prior research on the qualities of student teachers' strategies is relatively scarce and has mostly focused on teacher behaviour instead of also considering cognitive and emotional strategies used in classroom interaction (Emmer and Stough 2001; Stough and Montague 2015). This study contributes to the literature on student teachers' strategies by exploring the proactive and reactive

nature of the cognitive, behavioural and emotional strategies that they use in the classroom during the teaching practice periods in teacher education.

Student Teachers' Strategies in Classroom Interaction

Student teacher's strategies refer to the various means they use to manage classroom situations (Sutton, Mudrey-Camino, and Knight 2009; van Tartwijk et al. 2009). They are affected both by student teachers' knowledge, including prior, deeply-held beliefs, context-dependent interpretations and decision-making and situational demands and interests (Clark and Peterson 1986; Jiang et al. 2016; Lortie 1975). It has been suggested that due to their inexperience, student teachers' strategies rely heavily on their beliefs about themselves rather than on pupils, including less developed schemes of classroom interaction (Claessens et al. 2016; de Jong et al. 2013). Thus, student teachers' strategies focus on their own teaching practices instead of pupils' learning processes. Furthermore, they may have insufficient strategies for recognizing, categorizing and predicting problems in classroom interaction, and confronting problems through transforming instruction (Allas, Leijen, and Toom 2016; Wolff et al. 2015).

Student Teachers' Cognitive, Behavioural and Emotional Strategies

The strategies student teachers use in classroom interaction can be *cognitive*, *behavioural* and *emotional* by nature (Emmer and Stough 2001). *Cognitive strategies* entail student teachers' mental processes when managing classroom interaction, such as monitoring pupils, analysing their own and pupils' actions, setting new plans and adjusting goals. They observe reflectively what occurs in the classroom, make sense of it and modify their instruction accordingly (Bengtsson 1995; Schön 1983; Sherin, Jacobs, and Philipp 2011). Cognitive strategies have been suggested to be beneficial for

student teachers in dealing with challenges they face in the classroom and in supporting the development of pupils' learning strategies (Saariaho et al. 2016). However, it has been shown that student teachers construct more shallow interpretations of classroom events than experienced teachers and are unable to process information as quickly or adapt a lesson accordingly (Borko and Livingston 1989; Wolff et al. 2015).

Behavioural strategies refer to student teachers' physical efforts to manage classroom interaction. They entail expressing rules and expectations and multiple performing means to modify or prevent classroom events in the practicum context. For example, it has been suggested that greetings at the classroom door have a positive effect on pupils' on-task behaviour, whereas direct controlling behaviour, such as suppressing pupils' criticism and interfering with their preferred rhythm, have a negative effect on pupils' emotions, motivation and engagement (Allday and Pakurar 2007; Assor et al. 2005). Student teachers perceive praise and approval as more effective strategies than threats and warnings in managing discipline problems with pupils (Tulley and Chiu 1995). It has been suggested that empowering management of classroom situations and the learning environment are based on reciprocal teacher-pupil relationships (Väisänen et al. 2017). Overall, successful student teachers' behaviour entails high control and affiliation (van Tartwijk et al. 2009; Wubbels 2011).

With *emotional strategies*, student teachers alter the effects of the experienced emotion (Pekrun 2006). Emotion regulation includes recognizing the emotion and managing it by inducing, modulating or preventing it or using it to prompt an action or attain a goal (Matthews, Zeidner, and Roberts 2004). Student teachers use emotional strategies to keep themselves focused and motivated in classroom interaction and to maintain engagement and well-being (Wolters 2003). It has been shown that teachers more often down-regulate their negative emotions than they up-regulate positive emotions and they perceive that highly intense emotions in the classroom, either pleasant or unpleasant, may lead to loss of control (Aultman, Williams-Johnson, and Schutz 2009; Jiang et al. 2016). Controlling and sustaining a positive ambience in the classroom calls for student teachers' ability to regulate their

emotions. For example, increasing the visibility of their own excitement over classroom activities and hiding frustration about pupil behaviour are suggested to result in more productive teacher-pupil interaction (Anttila et al. 2016; Sutton et al. 2009).

Previous research on teachers' cognitive, behavioural and emotional strategies has often focused exclusively on a single aspect (e.g. Emmer and Stough 2001). However, due to the complexities of working in the classroom, student teachers' actions may be better approached through an intricate combination of these strategies (Emmer and Stough 2001; Snow, Corno, and Jackson 1996). The strategies that they use in classroom interaction often appear in compositions of various intertwined strategies (Kurki et al. 2016). Many studies indicate that one type of strategy may dominate and regulate the use of other strategies in the classroom situation (e.g. Clark and Peterson 1986; Sutton et al. 2009). For example, student teachers' thoughts in the classroom are followed by a change in behaviour, if perceived necessary and emotional strategies may be accompanied by certain behaviour (e.g. biting one's lip) or cognitions (e.g. reappraising the situation). Furthermore, student teachers' cognitive, behavioural and emotional strategies used in classroom interaction vary in terms of how deliberate or spontaneous they are (Eraut 2002; Manning and Payne 1993).

Student Teachers' Proactive and Reactive Strategies

Constructing and maintaining empowering classroom interaction in a teaching practicum requires not only student teachers' appropriate use of cognitive, behavioural and/or emotional strategies, but also the use of an analytical and proactive approach to classroom situation (Emmer and Stough 2001; Jennings and Greenberg 2009; Soini, Pyhältö, and Pietarinen 2010). *Proactive strategies* entail student teachers' anticipating actions to manage classroom interaction (Aspinwall and Taylor 1997). Proactive strategies prevent pupils' misunderstandings and misbehaviour, enhance learning and positive emotions or modify teacher-pupil relationships beforehand. For example, standing close to a

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group that might have problems in performing its task is a student teacher's proactive behavioural strategy that anticipates pupils' need for assistance. Proactive strategies have a positive and forward-looking approach to managing classroom interaction and dealing with problematic teacher-pupil encounters (Clunies-Ross et al. 2008; Greenglass and Fiksenbaum 2009). It has been shown that student teachers' proactive strategies are related to decreased burnout and suggested that learning of proactive classroom strategies should be facilitated throughout the Finnish teacher education programmes (Pietarinen et al. 2013; Väisänen et al. Forthcoming). Furthermore, student teachers with more education employ more proactive strategies than student teachers with less training do (Woodcock and Reupert 2013).

In classroom interaction, student teachers are required to act and respond quickly and sensitively (Manning and Payne 1993) to the situational demands. *Reactive strategies* refer to student teachers' automatic responses to classroom events, such as difficult questions or pupils' misbehaviour. They are immediate, spontaneous reactions that have not been consciously planned. For instance, when a group of pupils is not able to perform a task, a student teacher's reactive behavioural strategy would be to present the next task to move on in the lesson. Reactive strategies are not negative, but they tend to be unconsidered and emotionally driven; they can be oriented towards the present moment instead of control of future classroom events (Eraut 2002; Manning and Payne 1993). Reactive strategies do not entail forethought or justification; they rely on student teachers' practical knowledge that is based on prior experiences rather than new information (Eraut 2002). Although student teachers perceive proactive strategies as more effective, they report using reactive strategies more often (Reupert and Woodcock 2010). It has been shown that reactive strategies used to manage pupils' behaviour, such as punishments or threats, are related to increased teacher stress and decreased pupils' on-task behaviour (Clunies-Ross et al. 2008).

This study investigates the proactive and reactive nature of student teachers' cognitive, behavioural and emotional strategies by exploring the critical incidents that student teachers have chosen (Tripp

1993). Focusing on critical incidents emphasises the qualities of the strategies used in academic and social classroom situations that student teachers perceive as especially challenging or empowering.

Aim of the Study

This study aims to gain a better understanding of strategies that student teachers use in classroom interaction with pupils in the context of the teaching practicum. The focus is on exploring the cognitive, behavioural and emotional strategies student teachers report using in challenging and empowering incidents in the classroom. The following research questions are addressed:

1. What kind of cognitive, behavioural and emotional strategies do student teachers use in critical incidents in classroom interaction?

2. To what extent are student teachers' cognitive, behavioural and emotional strategies proactive [or reactive] by nature?

Methods

Research Context: Finnish Teacher Education

In Finland, student teachers comprise a highly-selected group of university students. Less than 10% of applicants with the highest grades are accepted into the primary teacher education programme at the University of Helsinki (VAKAVA 2014); this rate is exceptional in international comparison. Education in general and teacher's work are highly appreciated in Finland. All teachers must have a five-year university Master's degree. The primary teacher (grades 1-6) studies (300 ECTS) consist of orientation (25 ECTS); main subject studies in education or educational psychology (140 ECTS, including teaching practice 20 ECTS); compulsory minor subject (60 ECTS) and optional studies (75

ECTS). Practice periods are carried out in pairs: two student teachers plan the lessons together and take turns as the responsible teacher. Secondary teachers, who teach at grades 7-9 or in the upper secondary school, study a particular subject as a major and pedagogical studies of educational science as their minor subject (60 ECTS, including teaching practice 20 ECTS) to receive the teacher qualification. Teaching practice periods are organised in both the University Teacher Training Schools and field schools that collaborate with the Department of Teacher Education (Kansanen 2014).

Participants

The study participants consisted of 31 student teachers (mean age 26.03 years, SD 4.16) including five males (16%) and 26 females (84%). Students were at least half way through their teacher studies at the University of Helsinki. Participants were studying to become primary school teachers (25) and secondary school teachers (6). The secondary student teachers' major was either geography or biology. The research participation was voluntary. Informed consents were received from the student teachers who were willing to participate. Co-operation with supervising teachers was agreed and permissions from pupils' parents were obtained. The participants were selected based on their attendance in a major or final practice period and willingness to work as teachers soon after graduation. The distribution between male and female participants sufficiently represented the student teacher population at the teacher education institute.

Data Collection

The data were collected using the procedure of guided reflection (Husu, Toom, and Patrikainen 2008; Leijen et al. 2014; Toom, Husu, and Patrikainen 2015). The procedure (see Figure 1) consisted of

video recorded lessons and detailed consideration of critical incidents in the stimulated recall (STR) interviews (Lyle 2003; Tripp 1993). Student teachers chose a lesson that they wanted to be recorded, then watched the recorded lesson at home, and the STR interview was conducted within 1-4 days. Students were instructed to choose two critical incidents from the recorded lesson: one empowering, including an aspect that they considered successful and one challenging, including a situation that they experienced as difficult. The incidents were viewed together in the STR interview, which focused on actual classroom activities, student teacher's behaviour and thoughts, pupils' behaviour and the relations between student teachers and pupils during the chosen incidents (see the questions in Appendix 1). The video worked as a stimulus to bring forth student teachers' thoughts during classroom interaction and kept the STR interview focused on the actual classroom events. However, STR interview data typically include not only descriptions of interviewees' behaviour and thoughts during the incident, but also their thoughts related to teaching and learning on a more general level as well as multiple ideas stimulated by watching the video and discussing it (cf. Lyle 2003). The interviews lasted approximately twenty minutes per student. The data of this study consisted of the STR interviews that were gathered as the second phase of the procedure (see Figure 1) and included altogether 63 classroom incidents: 29 empowering and 34 challenging incidents.

[Figure 1]

Analysis

All STR interviews were transcribed. Interview data that were related to student teacher's strategy use during the classroom incident were chosen for the analysis. The interviews were read several times and an analysis protocol was developed. The data were analysed by using qualitative content analysis following abductive logic (Timmermans and Tavory 2012).

The analysis consisted of three complementary phases. At first, the 63 critical incidents student teachers described were coded exclusively as either *empowering* incidents, including successful situations, or *challenging* incidents, including difficult situations. The incidents were also coded exclusively either *academic* or *social* according to the core focus of the incident (Clunies-Ross et al. 2008). Incidents related to teaching, pupil learning or the curricular content were coded as *academic* incidents. Transitions between tasks, interruptions during the lesson and events concerning teacher-pupil relationships were coded as *social* incidents.

In the second phase, all the STR interview data text segments in which the student teachers described their strategy use during the chosen classroom incident were coded according to the type of strategy used in the episode into three exclusive categories: *cognitive*, *behavioural* and *emotional strategies*. These categories drew on the prior research suggesting that teachers may apply various cognitive, behavioural and emotional strategies to respond to and manage classroom situations (Clark and Peterson 1986; Emmer and Stough 2001).

Cognitive strategies entailed mental processes that student teachers used to actively and reflectively regulate classroom interaction, including conscious monitoring of events and interactive planning in the classroom. *Behavioural strategies* comprised student teachers' concrete and physical efforts to create, sustain or regulate classroom activities. *Emotional strategies* entailed student teachers' efforts to regulate their own affective reactions in the classroom situations, such as minimizing, switching, amplifying, or redirecting the spontaneous flow of feelings. If an incident included several strategies, the focus was on the cognitions, behaviour or emotions that were emphasised and repeated by the student teacher.

In the third phase, the text segments were coded according to the anticipatory nature of the used strategy either into the *proactive* or *reactive strategies* (Aspinwall and Taylor 1997; Greenglass and Fiksenbaum 2009). *Proactive strategies* consisted of future-oriented efforts to anticipate, influence

and control classroom events. *Reactive strategies* were immediate and spontaneous responses focused on an event that had already occurred. Finally, the connections between student teachers' cognitive, behavioural and emotional strategies as well as proactive and reactive strategies and the challenging and empowering, academic and social classroom incidents were elaborated.

Results

Student Teachers' Strategies in Critical Incidents in Classroom Interaction

Student teachers reported academic classroom incidents (45) substantially more than social classroom incidents (18). Academic classroom incidents consisted of giving instructions and guiding pupils' curricular activities and included approximately as many empowering (23) as challenging incidents (22). The social classroom incidents entailed disagreements or conflicts with pupils, pupils' worries and transitions between lesson activities. Challenging social incidents (12) were reported more frequently than empowering social incidents (6).

Student teachers used behavioural strategies (45) much more frequently than cognitive and emotional strategies (see Table 1) and they were more often reactive than proactive. Reactive behavioural (27) strategies entailed quick, rigid responses to unpredicted experienced threats and were predominantly used in challenging academic classroom incidents. Proactive behavioural strategies (18) typically consisted of student teachers' physical efforts aiming to motivate and activate pupils, confirm the smoothness of the lesson and the suitability of the environment. Student teachers used proactive behavioural strategies mostly in successful academic incidents. Cognitive strategies (15) were all proactive; they entailed student teachers' active monitoring, interactive planning, evaluation or thinking of self-efficacy. Student teachers used proactive cognitive strategies predominantly in empowering academic incidents. They used proactive emotional strategies (3) relatively rarely and in

successful classroom incidents. Proactive emotional strategies entailed student teachers' down- or up-regulation of their own emotions.

[Table 1]

Characteristics of Student Teachers' Cognitive, Behavioural and Emotional Strategies

Student teachers used reactive behavioural strategies when an event had already occurred and decreased or threatened their sense of control. They were often accompanied by expressions of stress, nervousness, uncertainty, inadequacy or time pressure (24/27, see Table 1), which seemed to restrict student teachers' reflective stance towards the complexities of the situation. Reactive strategies rarely aimed to solve the situation or problems. They were rather evasive actions (22/27), performed out of necessity; by using them, student teachers aimed to survive or retreat from the situation and to continue the lesson. In some cases, for example, student teachers were not able to get contact with an individual pupil or resolve the conflicts of pupil groups; thus, they perceived that they had no other options for their behaviour than to neglect or ignore the situation. Reactive behavioural strategies typically entailed very limited observations in the classroom situations (24/27). Student teachers struggled to notice the problems or misinterpreted the situation and reacted spontaneously and quickly. Lack of observations and a low sense of control resulted in the use of simple authoritative strategies, such as raising the voice. Most reactive behavioural strategies that student teachers utilized were also inflexible (24/27); student teachers did not change their script despite feedback or new information, such as pupils' questions or answers.

> *'He said that my notes were a bit illogical. And then **I started saying** that "Yes they are. You can do them how you wish. You can add arrows or slashes or something". I just*

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solved it as quickly and painlessly as possible, so that I could move on.' [Female, 3rd

year, Challenging academic incident, Behavioural reactive strategy]

Proactive behavioural strategies consisted of student teachers' self-initiative action anticipating future classroom events instead of mere reactions to previous events. They were characteristically pupil-centred (13/18) and aimed to motivate and activate pupils. For example, student teachers gave positive feedback to pupils or sat on the floor together with pupils while giving instructions. These warm and direct strategies were essentially planned beforehand (13/18) and used to ensure that pupils were engaged (e.g., asking certain pupils first, setting time limits). The student teachers had considered the characteristics of the task as well as their knowledge of and prior experience with the pupils.

'So very many of them wanted to volunteer to come to the front of the classroom. Then

the other pupils got to move them around according to my instruction. I wrote on the

*board: 6 x 2=3 and **asked them**, how they should move the pieces of macaroni to create*

this calculation.' [Male, 3rd year, Empowering academic incident, behavioural

proactive strategy]

Student teachers also used proactive behavioural strategies that were not predetermined for a particular situation (10/18), but had been used before or were otherwise familiar to them or the pupils. They kept the lesson on the right track, ensured that pupils followed and understood the instruction and managed the atmosphere and pace of the lesson (e.g., calming down pupils). Proactive behavioural strategies were predominantly confirmative (17/18); they did not change the original script of the lesson, but were used to avoid complications and streamline the lesson by ensuring the pace of curricular activities, fluent transitions between tasks and pupils' active participation in a safe

atmosphere. Proactive behavioural strategies also included asking peers that were in the classroom to help with an anticipated challenging classroom activity.

Proactive cognitive strategies always entailed close monitoring of pupils and their understanding. Student teachers made intent observations and cautious interpretations of the classroom situation and the required future actions. The strategies typically entailed deliberate efforts to consider pupils' perspective and initiatives and adapt the situation accordingly (12/15). Student teachers used the information available from pupils during the lesson, evaluated it immediately and flexibly changed their script of the lesson when they perceived it reasonable.

> *'I thought* wait a second, what have I done. Why did I let Kalle present his work? It is unfair, if only one person gets to present. The others need to be able to show their work too. This could be a good thing, but how is this going to work out? How much time do we have… Will we have any time left for working with computers? Hey, it's their idea; could I answer yes?' [Female, 5th year, Empowering academic incident, Cognitive proactive strategy]

When student teachers guided an individual pupil or a small group (6/15), they regulated their support according to their ongoing observations on pupils' ability to solve the task (i.e. scaffolding). In some of these situations, student teachers monitored the pupils and events, evaluated the lesson to be on the right course and did not perceive a need to change the teaching practices. Proactive cognitive strategies were often open and experimental (8/15); student teachers accepted the occurrence of unexpected events, were responsive towards pertinent pupil-specific and content-specific cues and even saw the situations as learning challenges for themselves and pupils. In some cases (4/15), student teachers reflected on their self-efficacy during the lesson, which entailed thoughts on their abilities

and evaluations of the situations with pupils. They expressed that these thoughts had a positive effect on their future actions, confidence and calmness.

Emotional strategies consisted of proactive regulation of their own emotions in the classroom interactions, which entailed student teacher's efforts to down- or up-regulate emotions during the lesson. Controlling the physical reaction and its visibility were perceived meaningful for the course of events in all three incidents. Down-regulation was used to restrain student teachers' own emotions like irritation and frustration with pupils. Up-regulation was used to emphasise and express enthusiasm and joy to all pupils. Student teachers' emotional strategies were all proactive; they regulated emotions to improve teacher-pupil interaction by hiding negative emotions, expressing positive emotions so that they would transmit to pupils or suppressing negative emotions to be able to listen to a pupil.

Discussion

Methodological Reflections

The study used STR interviews to analyse the strategies that primary and secondary school student teachers used in critical incidents in the teaching practicum. The STR interview produced valuable data for studying the cognitive, behavioural and emotional elements of teachers' actions in authentic classroom interaction. Some other methods, such as thinking aloud, are inappropriate for the context or constricted to analysis of behaviour (e.g. observation) (Lyle 2003). Focusing on the primary strategy that the student teacher used during the incident and emphasised during the interview brought out the qualitative variety of the strategies used in empowering and challenging incidents. However, classroom strategies are often intertwined and used in multiple situational combinations (e.g. Kurki

et al. 2016). In this study, the STR interview design was carefully structured, the sample was relatively large and represented the student population in the teacher education program well. Nevertheless, due to the differences in teacher education programmes and teaching between different countries, broader generalizations should be cautiously considered.

Results in Light of Previous Literature

The results showed that student teachers emphasised academic classroom situations over social ones. A reason for this might be that student teaches do not recognize the significance of the social incidents for pupils, because instead they focus heavily on their own performance as teachers during the lesson. Teaching practicums also centre around developing student teachers' skills for planning and delivering lessons, which may further strengthen this orientation. In addition, academic activities are more closely related to the pre-planned elements of the lesson that student teachers have already considered and anticipated, whereas the social incidents appear often somewhat unexpectedly; thus, student teachers might perceive them as less important. However, the quality of teacher-pupil relationships can make a difference in promoting pupil's school success and well-being (Pietarinen, Soini, and Pyhältö 2014; Roorda et al. 2011). Student teachers are nonetheless, shown to be particularly worried about learning the strategies for regulating the social classroom situations that are essential for creating and sustaining warm teacher-pupil relationships and a functional classroom climate that enhance pupils' learning, such as meeting the needs of pupils, listening to their worries and managing troublesome groups (Gao and Benson 2016; Oberski et al. 1999). However, the small quantity of social incidents reported by the student teachers implies that student teachers need pedagogical structures, strong guidance and mediational tools for learning in and from the social situations of classroom work.

The results also showed that student teachers used reactive behavioural strategies most frequently in challenging classroom situations. This seemed to correspond to the lack of proactive cognitive strategies adopted by student teachers in these challenging situations. Reactive behavioural strategies indicate student teachers' insufficient situation-specific skills, such as perceiving and interpreting meaningful information in the classroom incident, which leads to quick decisions and behaviour guided by their dispositions (Blömeke, Gustafsson, and Shavelson 2015; Wolff et al. 2015). Due to student teachers' inexperience in working in the classroom, they are focused on themselves and the fulfilment of lesson plans instead of aiming to understand pupils' learning in the situation and adapting their goals, immediate practices and future actions accordingly (Claessens et al. 2016; de Jong et al. 2013; Fuller and Bown 1975). The pre-interactive practicum activities (i.e. setting goals, preparing the lessons) have an important role in student teacher learning because they provide the basis for their classroom practice. This preparation is often done in collaboration with a supervisor and a peer. Executing the lesson is a complex task requiring sensitivity, deliberateness and flexibility in managing classroom interaction. When facing unexpected challenging classroom incidents, student teachers apparently preferred strategies that they considered to be effective in getting them back on "the right track". In practice, this often meant applying quick and rigid reactive strategies that were counterproductive in terms of enabling expedient adaptation to the situations. Reactive behavioural strategies characterised by restricted inward focus and survival-orientation seemed to restrain student teachers' experiences of being in control of the situation or of their own actions.

The result further showed that student teachers' proactive cognitive strategies were central in empowering classroom situations. Strategies used for perceiving and interpreting classroom events and transforming classroom practices accordingly constructed positive meaningful experiences for student teachers. They represent student teachers' strategies of the highest order showing attentiveness towards pupils, clear perceptions of classroom situations, precise interpretations of classroom events, and flexibility and adaptiveness in classroom practices, which are often referred to

when describing strategies of expert teachers (Blömeke et al. 2015; Hattie 2003). Behavioural and emotional strategies were also predominantly proactive when applied in the empowering classroom situations. These results are further demonstrated in the challenging situations where cognitive strategies were rarely used, the use of behavioural strategies was reactive in nature and emotional strategies were absent. These findings suggest that cognitive strategies have a specific role not just in constructing positive experiences for student teachers in a teaching practicum, but also in leading the way for other proactive strategies that they use according to their situational comprehension (Blömeke et al. 2015; Jennings and Greenberg 2009). The results of this study imply that student teachers need to be guided to become aware of the strategies they use in the classroom, so that they can reflect and learn to regulate them and experiment with alternative strategies in future classroom situations. Being able to notice and interpret the behaviour of pupils and the course of classroom events provides the basis for developing functional classroom practices. It also entails various situational evaluations (i.e. appraisals) that produce emotional stimulus (e.g. Jiang et al. 2016). Therefore, more attention should be paid not only to increasing student teachers' situational sensitiveness, but also to facilitating learning of emotion regulation strategies that enable them to concentrate and direct their cognitive resources to the essentials of teaching and learning in the classroom.

This study provided new insights to the strategies student teachers apply in the significant classroom events during teaching practice periods in Finnish teacher education. The results were in line with previous findings that have emphasised the need to enhance student teachers' learning of proactive strategies in teacher education to enable them to actively and deliberately construct and transform their classroom practice after their transition to work life (Heikonen et al. 2017; Väisänen et al. 2017). Naturally, cultural inclinations influenced these results (cf. McIntyre, Mainhard and Klassen 2017) through expectations set for the student teachers' teaching and learning as well as for the characteristics of classroom environment and relatively informal atmosphere to be maintained in Finnish basic education classrooms. However, further studies are needed on how student teachers'

cognitive, behavioural and emotional strategies are related and complement each other in various classroom situations during the teaching practicum (Kurki et al. 2016). Identifying the most effective combinations and the functions of different strategies within them would shed light on the skills that student teachers need for successful teaching and learning in the classroom. In addition, longitudinal research capturing the development of student teachers' capacity to actively, skilfully and intentionally learn in classroom interaction is required for informing teacher educators on how to scaffold their delicate classroom practice appropriately (Soini et al. 2015; Blömeke et al. 2015).

Implications for Developing Teacher Education

Teaching practicums are among the most important opportunities for student teachers to experiment with their classroom strategies, test what they know and can do, and try out working as a teacher in the classroom. Experimenting with classroom strategies requires that the teaching practicum provides safe surroundings and opportunities to practise the skills and strategies that are needed for successful teaching and management of classroom situations. In this safe and constructive environment, student teachers are more likely to try out novel strategies and test various approaches in classroom interaction (McGarr and McCormack 2016).

Learning proactive classroom strategies needs to be facilitated before, during and after teaching practicums through using case descriptions, classroom simulations and authentic problem-solving situations in which student teachers are able to observe their own and pupils' actions, collaboratively discus alternative strategies and actively experiment with new classroom practices (Youens, Smethem, and Sullivan 2014). Furthermore, lesson study has been suggested to contribute to student teachers' understanding of the complexities of teaching in a holistic and situated way and enhance their classroom strategies by moving their focus from themselves to their pupils and the pupils' learning (Cajkler and Wood 2016). Overall, teacher education should be organised not only to

maximise student teachers' interactions with pupils, but also to use these mediational tools to build a continuum of experienced teacher-pupil encounters to help student teachers (and teacher educators) become aware of their developing classroom strategies and the strongly held beliefs and knowledge affecting them. (Tynjälä et al. 2016). In these mediational processes and in every teaching practice period, the supervising teachers, their classroom practices and principles are highly influential. Thus, careful selection of supervising teachers in the field schools and their continuous co-operation with the university is also essential in enhancing student teachers' learning of proactive strategies during the teaching practicum (Hoffman et al. 2015).

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Appendix 1

A. What is happening?

- What can you see/hear yourself doing?

- What can you see/hear the students doing?

- Is there a relationship between what you are doing and what students are doing?

B. Why do you think this is happening?

- Which student behaviour follows your behaviour?

- Which behaviour of yours follows the students' behaviour?

- What makes the incidents meaningful for you?

C. What personal theory or principle could you derive from the incidents?

- Which pedagogical skills are addressed in the incidents?

- How do you explain the success in incident A?

- How would you identify the problem raised by incident B?

D. What have you learnt from the incidents so far? How would you make use of this new

knowledge in your future practice?

Table 1: Student teachers' strategies in classroom interaction

	Empowering		Challenging		Total
	Academic	Social	Academic	Social	
Proactive Cognitive	11	-	1	3	15
Reactive Cognitive	-	-	-	-	-
Proactive Behavioural	10	4	2	2	18
Reactive Behavioural	-	1	19	7	27
Proactive Emotional	2	1	-	-	3
Reactive Emotional	-	-	-	-	-

Figure 1. The procedure of guided reflection (ACTTEA 2012-2015; Husu, Toom, and Patrikainen 2008; Toom, Husu, and Patrikainen 2015)