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Work integrated Learning

Crossing Boundaries

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As with all projects, even this thesis met it's ending.

It's been a personal journey between hope and despair, but when looked back upon, a journey well worth the effort. I've met new perspectives and interesting theories while reading the literature, which my work is based on, and I've gained confidence in my skills regarding the scientific approach, and actually making myself understood in English.

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Finally

Oscar, Felicia & Kira

You rock!

Abstract

Work integrated learning was established at Swedish universities about twenty years ago; and today there are some different attitudes about the purpose of integrating theoretical perspectives to practical experiences, during higher education. For example, there are arguments that students tend to become clients or tools in order to gain regional development if the practical perspectives overcome the possibilities of reflection. Education will in this case only serve to facilitate employment after graduation, rather than to facilitate developmental learning. To understand the relationship between reproductive- and developmental learning, this thesis explores the different kinds of strategies student teachers develop, during their teacher training – to gain the skills and knowledge needed to work as a professional teacher. The focus is how the students respond to the various emerging contradictions, while crossing the boundaries – between the university, and the workplace. The activity theory approach conceptualizes boundary-crossing as a phenomenon based on the idea of horizontal development – which requires the ability to find relevant information wherever it may be available. The implication is that change and development occur as a result of collaboration through mutual boundary objects, and via emerging contradictions between two or more interacting activity systems. The overall design resembles a phenomenological case study performed over a period of approximately six months. The population providing the empirical data consisted of five student teachers, in their first year, attending a teacher training program in Sweden. Data collection was gathered through a three-step design, where exploratory narrative interviews were conducted at three different occasions: (i) after their first period of work placement, (ii) before entering their second period of work placement and (iii) immediately after their second period of work placement. The results indicate that the students' processes of learning include four distinct learning strategies (questioning, challenging, adjusting and imitating), to transform the information given in various situations. These strategies are consequences of the students' prior experiences when encountering contradictions during their teacher training program.

Keywords: Work integrated Learning, learning strategies, activity theory, learning, legitimate peripheral participation, work placement.

Sammandrag

För omkring 20 år sedan utvecklades arbetsintegrerat lärande som en ny pedagogisk form på svenska högskolor och universitet. Det råder dock delade meningar om syftet bakom högskolans ambition att integrera teoretiska perspektiv till individuella praktiska erfarenheter. Exempelvis riskerar studenter att liknas vid klienter, eller verktyg för regional utveckling om fokus på praktiska erfarenheter överordnas möjligheten till reflektion. Utbildningens roll kan i så fall bli att underlätta anställningsbarhet efter examen istället för att leda till ett utvecklingsinriktat lärande. För att förstå relationen mellan anpassnings- och utvecklingsinriktat lärande undersöker denna uppsats vilka strategier lärarstudenter utvecklar, under utbildning på lärarprogrammet, för att uppbära den kunskap som behövs för att kunna arbeta som lärare. Fokus ligger på hur studenterna svarar mot de varierande motsättningar som uppstår vid övergångarna mellan högskolan och arbetsplatsen. Uppsatsen utgår från verksamhetsteoretiska resonemang och speciellt fenomenet ”boundary-crossing” som innebär grunden för horisontell utveckling och innefattar förmågan att finna relevant information där den är tillgänglig. Utgångspunkten är att förändring och utveckling sker som ett resultat av samverkan mot gemensamma mål och på grund av motsättningar mellan två eller flera verksamhetssystem. Det övergripande upplägget av studien kan liknas vid en fenomenologisk fallstudie och utfördes under sex månader. Populationen som ligger till grund för studiens empiriska data består av fem lärarstudenter som studerar sitt första år vid en av Sveriges lärarutbildningar. Data samlades in genom narrativa intervjuer vid tre olika tillfällen: (i) efter studenternas första praktikperiod, (ii) innan studenterna påbörjade sin andra praktikperiod och (iii) direkt efter att studenterna avslutat sin andra praktikperiod. Studiens resultat visar att lärarstudenterna använder fyra olika lärandestrategier (ifrågasättande, utmanande, anpassande och imiterande), för att omvandla den information de möter till kunskap, vid olika tillfällen under lärarutbildningen. Dessa strategier utvecklas som följd av de erfarenheter studenterna har med sig när de möter olika motsättningar under lärarutbildningen.

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Introduction

During the recent fifty years, western society has moved through a rapid development from a society based on production to a society that can be more characterized by consumption. This development has influenced the labor market and its changes to more flexible and to a point boundary-less conditions. The market is demanding flexible forms of employment and more intense educational programs to prepare the students with work experience before entering work life. This means that the labor market, to some extent, produces the prerequisites by which the individual is set to adjust (Allvin et al., 2006). Zygmunt Bauman (2008) argues that it is by consumption that the individual develops his or her identity. It is the market that is creating the prerequisites for development by producing and marketing possibilities as commodities and services. He stresses that the individual needs to protect him- or herself against the massive flow of information always present and available. The ideal worker of today, according to Bauman, is a person who is committed to take on whatever task given and does not have any commitments besides work (Bauman, 2008). This can be understood as companies strive to foster and educate their employees based on the existing culture and needs of the company. By promoting a certain company-culture where a specific behavior and language reign, the company aim to tie the employees closer to the company values to form a kind of company-identity. In this case the most important prerequisite is not that the individual possesses a good education – because employers prefer that the work applicant is flexible and can uphold a decent social competence. The company primarily invests in the employees' commitment and later on develops competence through company based education. By doing this the employees knowledge is adjusted to the companies' needs and interests simultaneously as (s)he attains a work-identity anchored in the company-culture that the employer strives (Gorz, 2001). To respond to both the development of the society and to the needs of the labor market, a new educational form of learning has been developed - work integrated learning – referred to as WIL. Through WIL, the theoretical perspective gained at the university is integrated by the individuals' practical experiences of work; which enable a transformation that exceeds any traditional educational form (Thăng, 2004).

Work integrated learning

WIL was established about twenty years ago in Sweden and is practiced at universities through; co-operative education (Co-op) – where the students have the possibility to work up to one year, fully paid, during their educational program, work placement – where shorter periods of field studies are intertwined with theoretical studies, bachelor- and master thesis's produced in collaboration with trade and industry, and by developing pedagogical methods in class to integrate the students' different experiences and perspectives. As Olof Blomqvist argues, theory and practice are not to be understood as two separate activities when it comes to the individuals' learning process. Through integration, new perspectives emerge, where understanding and knowledge increases and promotes motivation among the students (Blomqvist, 2004). Björn Mårdén (2007), on the other hand, stresses that if an educational program is integrating practical experiences in a greater extent, there need to be greater possibilities for reflection. He argues that the discourse among scientists mainly centers at an economic perspective, that employability should be the main focus in educational programs with WIL as ideology. There is a possibility that learning and knowledge creation tends to be commodified and used as means of competition amongst those who know best how to use the knowledge most effectively. Through this perspective students tend to be clients or tools to gain regional development (Mårdén, 2007). By using a more pragmatic approach when working with WIL, the complexity of the learning process itself is probably neglected.

Practice based education and the logics of learning

For centuries, the most natural way to gain the skills and knowledge needed to perform actions at work has been to observe and gradually participate in different activities under supervision of a more experienced worker. In the beginning of the 20th century, this so called master-apprentice educational form was accompanied by formal education. The purpose was to enhance the otherwise slow process of learning, by presenting scientific theories which the apprentice could reflect upon (Nielsen & Kvale, 2000). In the late 1970's, Chris Argyris & Donald Schön clarified the reflective action as a double-loop process of learning and explained the process as an active transformation of individual understanding. By reflecting upon an action, the individuals' sense of meaning and coherence increases; which makes it possible to observe the same action with a greater understanding, or through wider perspectives, and thereby develop new skills and knowledge (cited in Reason, 1994). Another

distinction of learning, where reflection is the determinant, is between reproductive- and developmental learning (Ellström, 2005). It is probably between these two logics of learning where the discourse, whether WIL will contribute to a high employability or to higher levels of learning, is routed. According to Per-Erik Ellström (2005), these two logics of learning are constantly taking place. To some extent, we need to develop routinized actions, via reproductive learning, to reduce variation and complexity and to promote homogeneity in everyday activities. We use methods or strategies that we are familiar with. On the other hand, if a problem occurs which cannot be solved by using routinized, actions we need to seek help or develop new ways of action. This is where reflection upon an action transforms into developmental learning (Ellström, 2005). Obviously, the need of both logics of learning is necessary for everyday life and work.

The aim of the study

This study will examine the relationship of the two logics – reproductive- and developmental learning – during the first year of a teacher-training program in Sweden. Different kinds of student strategies used to facilitate the two learning processes are explored. The focus will be on the kinds of contradictions students are faced with, and how they respond to them while they are entering and crossing the boundaries of the university and the workplace.

Research questions

- How do the students perceive the relationship between the theoretical perspectives gained from the university and the practical experiences gained during work placement?
- How do the students perceive the university as a facilitator of their learning process?
- What kind of contradictions do the students´ meet while crossing the boundaries of the two activity systems?
- What kind of learning strategies do the students apply?

A qualitative approach

The overall design of this thesis is inspired by the phenomenological way of conducting research; which is rooted in the hermeneutic tradition. The purpose is to understand individual actions, in a constantly reconstructing context. Hermeneutics is about interpreting, and approaching individual experiences as separate wholes, and their relation to everything known around them. A central aspect is the systematic questioning and testing of ones interpretations; a process resembling an upwards-going spiral. This metaphor, is used to describe the openness of the research process. The upwards-going spiral resembles an alternating between data collection and analysis, on one hand, and interpreting and theorizing on the other hand (Starrin & Svensson, 1994).

My positioning is inspired by the socio-cultural perspective; which basically means that my way of conducting research is based on the conception that the world and everyone within it are constantly developing due to social circumstances. Applying a socio-cultural perspective

on learning implies that the individual learns in a specific context, but is at the same time part of constructing a wider consistency where the context is being shaped (Lave & Wenger, 1991) One of the founders of this perspective is Lev Vygotsky, who in the 1920's questioned the implication of behaviorism; that human behavior is explained via the effect of different stimuli. According to Engeström (2001), Vygotsky argued that human behavior can only be understood by exploring their surroundings of the individual and that the individuals' response is affected by the social factors in the surroundings (cited in Engeström, 2001). It is hereby a dialectic relationship between the individual and the context which is developed through social mechanisms. It is difficult to generalize any causal relationships to explain a certain phenomenon, because the experience an individual is carrying from one situation affects the experience of the next (Alvesson & Sköldberg, 2009).

Theoretical frame of reference

Hermeneutic-phenomenology

Phenomenologists are critical of modern natural science for having distanced itself too far from its basis of every-day life. They argue that the foundations of ordinary human experience are neglected when creating abstract worlds by generalizing rational scientific analyses. The philosophy of phenomenology is the aim to discover how meaning is constructed by lived experiences (Alvesson & Sköldbberg, 2009). Phenomenology is about “being there” and to describe things as they are consciously perceived. The essence and meaning of an object can, therefore, only be understood by how it is perceived and experienced by the individual. A phenomenon is therefore not something in and of itself, but becomes something according to the meaning given when experienced (Husserl, 1980).

[...] and we can indeed ask, and this question guides us constantly in experience, how this object looks according to its other sides, how it is determined through ever new perceptions and is to be described according to them and is to be determined in thought. Thereby every new experience poses new questions. (Husserl, 1980. p. 27)

Each new perception may broaden the horizon of a particular object, a horizon that represents the individuals' comprehension of all experiences gained of a particular object. The crucial point is that the horizon involves more than the object in which the individuals' interest is directed. This implies that lived experience depends on earlier accumulated experiences; therefore, it is important to consider the context in which the phenomenon is being experienced. The horizon of experiences is what Husserl conceptualizes as an individuals' life-world (as cited in Zahavi, 2003).

Whereas the life-world is a world of situated, relative truths, science seeks to realize an idea about strict and objective knowledge that is freed from every relation to the subjective first-person perspective. Whereas the object in the lifeworld are characterized by their relative, approximate and perspectival givenness. (Zahavi, 2003. p. 126)

The process of reflecting and interpreting the meaning of different experiences to one's life-world can be seen as representing the dialectic relationship between phenomenology and hermeneutics. As stated above, each new reflected experience affects the expansion of the individual's life-world, in which (s)he reflects future experiences within (Husserl, 1980).

Cultural-historical activity theory

The cultural-historical activity theory is usually described, and probably best understood, as developed through an expansive process throughout three generations. The theory was initiated by a group of revolutionary Russian psychologists in the 1920s and early 1930s. According to Engeström (2001), the approach was led by Lev Vygotsky and his colleague Alexei Leontév. They formulated a completely new theoretical concept to transcend the current understanding of psychology; which was then dominated by psychoanalysis and behaviorism. This new direction was based on a model of tool-mediated and object-oriented action (Engeström, 2001). Leontév later expanded the theory from being limited to address the individual action as the unit of analysis to include the community and the division of labor. This second generation of activity theory focused on the internal dynamics and development of entire systems of activities; which resulted in a consciousness about the dialectic relationship between an individual action and a collective activity (Knutagård, 2002). The present third generation of cultural-historical activity theory has two or more interacting activity systems as units of analysis and seeks to develop conceptual tools to understand multiple perspectives and networks of interacting activity systems (Engeström, 2001).

The activity system

According to Engeström (2001), an activity system consists of a community who's collective and individual actions are mediated by different rules, instruments (tools and signs), and division of labor (illustrated in Figure 1).

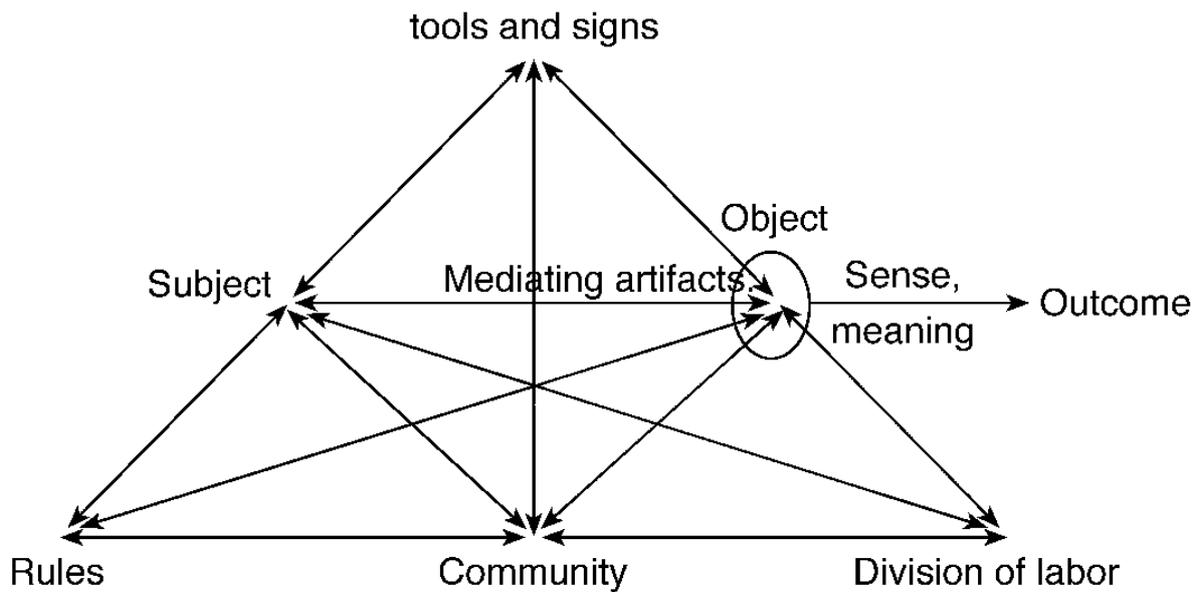


Figure 1. The basic structure of a human activity system (Engeström, 2001, p. 135)

The activity is directed and motivated toward a collective purpose and is developed through the dialectic relationship between individual actions and the prerequisites of the context. In other words, contexts are activity systems. In the third generation of cultural-historical activity theory the model of an activity system is based on the relationship between six elements. We begin with (i) the individual and then (ii) the object, at which the activity is directed and transformed into outcomes, with the help of (iii) external and internal instruments. These elements are affected by (iv) the community, the individuals, and subgroups who share the same general object, (v) the division of labor – which refers to the vertical division of power and status as well as the horizontal division of tasks between the members of the community. Finally we have (vi) the rules within the activity system – which refer to regulations and norms that limit or facilitate actions and interactions. These relationships create a constant reorganization and reproduction within the context – which result in a constant change, or development of the activity system (Engeström, 2001).

An activity is collective and oriented at a culturally significant object – which forms the motive of the activity and the individual actions within. This means that an activity is based on a collective interest, or need, of the participants in the community (Tuomi-Gröhn & Engeström, 2003). The relationship between activity and action is that the object determines the horizon of possible aims and actions. An activity system therefore contains an internal hierarchy of dialectic relations. The activity is realized through individual actions, but is

constantly restructuring the possibilities and directions of the actions embedded. Actions become operations when they have become automatic routines. They are determined by situational circumstances and can be understood as a more or less reflected action using available instruments and strategies (Nilsson, 2003; Tuomi-Gröhn & Engeström, 2003). To describe the actions and operations within an activity, one needs to understand the motive that gives meaning and motivation for development (Knutagård, 2002).

A community of multiple points of view

An activity system, as stated above, is not a stable structure but filled with tensions, conflicts, and perspectives, as well as layers of historically accumulated instruments, rules, and ways to divide labor. In networks of interacting activity systems, this is a source of complexity, but also a source of innovation because it creates a need of translation and negotiation between the interacting activities – which is a potential resource for development (Engeström, 2001). This implies that learning and development is generated through participation and dialogue. The situated learning approach is based on the notion that one learns most effectively during practice and that knowledge is an incidental byproduct of participation in meaningful activities. The process of learning is seen as a transformation of the dialectic relations between the individual and the community in which (s)he is participating (Thång, 2004). The process of situated learning is best understood as legitimate peripheral participation – which emphasizes the individual's journey, as a newcomer, towards full participation to become a legitimate member of a community. During the process, the individual transforms into a practitioner whose changing knowledge and skills are part of a developing membership – which is strongly tied to the conception of motivation. In this view, learning is often incidental and embedded in the mastering of new understandings through more intensive participation in new activities (Lave & Wenger, 1991).

Developmental transfer

Several studies have conceptualized transfer either as a transition of knowledge from one situation to another, or as a transition of work practices from an expert to a newcomer. The traditional view on transfer is that it should take place between two versions of the same problem. It is often treated as a process of taking a given instrument and applying it somewhere else. A socio-cultural view on transfer, on the other hand, stresses that what is

transferred is not knowledge from one situation to another, but patterns of participatory processes across different situations (Tuomi-Gröhn & Engeström, 2003). Developmental transfer can be understood as taking place through interaction between collective activity systems.

Contradictions as a source of developmental transfer

The essence of developmental transfer is the combination and construction of networks of expertise. Crossing boundaries involves entering into a new context in which the individual is unfamiliar. In this new context, new problems demand retooling and different perspectives need to be integrated into a collective understanding of the activity. Boundary-crossing between networks are based on the idea of horizontal development – which requires the ability to seek assistance and to find relevant information and instruments wherever they happen to be available. Put in other words, to create and gain access to peripheral networks. Another prerequisite for developmental transfer is the dialectic relationship, that co-operation between different activity systems is useful for both communities (Tuomi-Gröhn, 2003). Concrete or theoretical instruments that facilitate joint development become boundary objects that serve as the zone of proximal development¹ and are essential to collaboration that leads to overlapping of activity systems. Via the boundary objects, different perspectives integrate and enable horizontal expertise. The boundary objects are therefore promising tools to facilitate boundary-crossing – they give possibilities to innovative solutions in collaborative development (Tuomi-Gröhn, Engeström & Young, 2003). The implication is that change and development occur as a result of collaboration through mutual boundary objects and via emerging contradictions² between the interacting activity systems. Development can be understood by tracing these contradictions both historically and currently (Nilsson, 2003).

¹ The general logic of the zone of proximal development is that the individual is given a task beyond his or her present capabilities, a task that (s)he could not solve using existing tools or skills. It means that (s)he must interact with the environment to gain access to necessary information needed to solve the given task. This emphasizes that the individual selects the knowledge needed and is not simply a transfer of skills from one who “knows more” to one who “knows less”.

² Contradictions are not to be understood as problems. Contradictions are historically accumulating structural tensions within and between activity systems. The implication is that development occurs as a result of innovative retooling to master these contradictions.

The possibility of expansive learning

Engeström (2001) compares the theory of expansive learning to Gregory Bateson's different levels of learning, and especially the phenomenon of Learning III³. It refers to a situation where demands and tensions directed at the individual are experienced as conflicting and it does not seem to matter what (s)he does, it will in any case be wrong. The individual needs to distance him- or herself and start to construct a larger context, by expanding the object of the activity. (S)he needs to go beyond the information given and construct new sets of rules, instruments, and ways to divide labor to liberate him or herself from the constraints in the present context. Individual expressions of Learning III are often called "turning points" or "personal crises" and can result in a consciousness and the ability to examine the whole activity system in its past, present, and future versions (Engeström, 2001; Nilsson, 2003).

³ For further reading, see Bateson, 1972.

Design and methodology

The overall design of this thesis resembles a phenomenological case study performed over a period of approximately six months. The population providing the empirical data consisted of five student teachers in their first year attending a teacher educational program in Sweden. Data collection were gathered through a three-step design where exploratory narrative interviews, complemented by a field-study, were conducted on three different occasions: (i) after their first period of work placement, (ii) before entering their second period of work placement and (iii) immediately after their second period of work placement.

Samples

To find respondents for this thesis, I in an early stage, got the opportunity to present my thoughts and the design of the case study during a lecture where the student teachers were gathered. Nineteen students gave their permission to contact them with further and more detailed information about their prospective participation. Through mail correspondence, five students confirmed their interest in participating in the case study and 14 students withdrew from participating mainly because of time-shortage in relation to the long-term design. This process, from first meeting the class to actually conducting the first interview, spanned nearly one month time. I found it very important to be confident that the respondents made their choice of participation based on adequate information, and not risking anyone dropping out because of lack of interest during the process of data collection.

Data collection

The original design of the data collection consisted of a three-stage process of exploratory narrative interviews with each respondent and a field study during the respondents' second work placement – a total of 15 interviews and 5 field studies. The purpose of conducting three interviews with each respondent was to better understand their life-world using different themes for each interview, to pick up loose ends first recognized during transcription of former interviews, and of course to follow up on the respondents journey through the different stages of their teacher training – at the university and during work placement (Zahavi, 2003, Riessman, 2008). The first of the five initially planned field studies served as a confirmation

of earlier interviews and also as basic data for the third and last interview. The other four planned field studies had to be cancelled because of several complications⁴. Furthermore, two interviews with one of the respondents had to be cancelled because of time- and travelling complications. The interviews took place with 1-2 months interval and lasted between 45-90 minutes. Catherine Kohler Riessman (2008) stresses that narratives that refer to entire lives or careers, what Husserl would conceptualize as life-world, are better understood when built over a period of several interviews and argues that a narrative interview is something other than a traditional interview:

The model of a “facilitating” interviewer who asks questions, and a vessel-like “respondent” who gives answers, is replaced by two active participants who jointly construct narrative and meaning. [...] the goal in narrative interviewing is to generate detailed accounts rather than brief answers or general statements. (Riessman, 2008. p. 23)

The first interview was semi-structured using four different themes; (i) the first period of work placement, (ii) ambition and expectations regarding the teacher educational program, (iii) critical incidents in their lives and (iv) memories and attitudes toward compulsory school. This resulted in a fairly broad sense of their character and made it possible, at least to some extent, to expand my perspective and recognize some important features in each of the respondents’ personalities. The second interview was open-ended and focused on their experiences and conceptions of their first six months of theoretical education at the university as well as their expectations toward their second period of work placement. The third interview was also open-ended and focused on their experiences during their second work placement and to tie up possible loose ends from previous interviews (Riessman, 2008). The interviews were conducted at the students’ university in a private room, free from external disturbance. All interviews was recorded and transcribed into text to facilitate the process of analysis.

⁴ My presence would make them nervous, one supervisor did not find it appropriate and other personal circumstances resulted in that the field studies had to be cancelled

The analytical procedure

To explore the students' different kinds of strategies, by investigating how they respond to different contradictions within and between the different contexts, one needs to understand the motives of the students as well as the circumstances within the contexts (Knutagård, 2002).

The procedure of analysis was conducted through a three-step process of interpretation, structuring, and reflection. Moustakas (1994) characterizes the first step of a phenomenological analysis as to break free, or bracket, from everyday understandings. The researcher needs to distance him- or herself from his or her own understanding of the phenomenon to grasp as many different perspectives of the phenomenon as possible (1994). This was done by first getting acquainted with the material of each respondent. By reading the interviews over and over again some main themes occurred in the text which enabled a process of reduction and grouping of statements. This second phase of analysis created a structure of the different experiences presented in the data – which lead to the process of reflection (Moustakas, 1994). A parallel process of structuring, using the model of the activity system, created a frame in which the respondents' experiences could be reflected upon. This made it possible to identify the different activity systems, their design and influence on the students as well as the students influence on the contexts. Parallel to the structuring and clarification of the activity systems, a thorough process of interpreting and understanding the respondents' motives was performed using a narrative approach. When quoted in this thesis the respondents statements were translated into English with the help of an English-speaking person.

The narrative approach

The narrative approach is considered to create meaning and a deeper understanding of the respondents' individual experiences through the journey of their teacher training, and was applied to explore differences and/or similarities among the respondents' experiences. One way to better understand an individuals' attitude and personal beliefs is to expand the object of analysis to his or her cultural and historical life-world. Using a narrative approach one strives to understand different parts of a story in relation to it as a whole, through a timetable or like a chain of events (Riessman, 2008).

A good narrative analysis prompts the reader to think beyond the surface of the text, and there is a move toward a broader commentary. Just because narrative approaches interrogate cases (rather than population-based samples) does not mean results cannot be generalized. [...] case study involves generalization to theoretical propositions, which are to some degree transferable. (Riessman, 2008. p. 13)

By structuring the different themes detected throughout the interviews, in a chronological order, it formed logic and a sense of coherence. This made it possible to understand the relationship between historical events and to identify critical incidents or turning points – which could have affected their thinking and acting of today (Johansson, 2005). Steinar Kvale (1997) describes the narrative approach as a continuation of the story the respondent presented at the time of the interview. The analysis leads to a new narrative – which develops the themes of the original story (Kvale, 1997). This approach does carry some potential of bias because it relies so much upon the hermeneutic way of reflecting on and interpreting the material presented. This makes the time of the interview very crucial. Alf Arvidsson (1998) stresses that there are cultural underlying mechanisms that more or less affect the respondents' way of reflecting upon his or her life, i.e. there are different cultural models about how a life should be; which serves as a frame of reference to adjust the individuals acting and thinking within. These models determine how the individual structures and prioritizes different experiences before others (Arvidsson, 1998). One way of reducing the risk of bias was to return to some themes or events during the three interviews conducted with each respondent. The development of each respondent's narrative was constantly reflected upon and developed parallel to the process of data collection and analysis during the entire case study.

Some ethical considerations

When meeting the respondents at the first interview, they were assured that all data during the study would be used for research purposes only and kept strictly confidential. The respondents were free to choose to participate and before participating in the study were informed about the possibility to withdraw from participation at any time. By asking for consent and informing the respondents of their conditions of participation in the study, I made sure that the requirements regarding research ethics from the Swedish research council were

fulfilled (Vetenskapsrådet, 2002). Each respondent has been given a figurative name which ensures their anonymity.

Results

The first six months of the teacher educational program, the students participate in three theoretical courses and one short period (two-three weeks) of work placement. Although they are studying to be specialized in children- and youth development at different levels and between different subjects, together they are studying the basics of teaching during their first term. Their unique specialization is first developed during the second term, where they also get the chance to actually act as a teacher during their second period of work placement. The journey to become a teacher is filled with theoretical perspectives as well as practical experiences gained at the university and during the periods of their work placement.

During the first year of training the student teachers several times experience themselves crossing the boundaries of the university and the work place. While doing that, contradictions often occur that makes the students question their own capabilities, or in some cases, the actual structure of the pedagogical approach of the teachers at the university and the supervisors at work. This questioning seems to be, to some extent, based on personal beliefs and established attitudes nurtured by historical events and experiences (Engeström, 2001). Although the experiences among the respondents vary a lot, there seems to be some general beliefs toward the upcoming career as a teacher. The beliefs are mainly about pedagogical approaches and some psychological aspects in teaching, probably gained through experiences in the teaching at the university.

This chapter tries to portray the contexts where the students are acting and learning to be professional teachers. The aim is, on one hand, to depict the two activity systems and their ways of facilitating the students learning process, and on the other hand, how the students respond to this, i.e. what kind of learning strategies they apply and why. But first, the respondents will be introduced.

Respondents of the case study

Kaisa

During secondary school, Kaisa decided to become a teacher with a specialization in social science. Her interest in equality is probably going to constitute the basis of her performances of teaching in secondary school.

There is so much prejudice that you're not even aware of having. [...] It was something I felt in secondary school that I'd probably like to work with. It was probably about a year ago that I decided "No, it will be the teacher training programme". I hadn't even thought about it before, I was totally focused on other things. (Kaisa)

The decision to become a teacher in social science is mostly because of her previous encounters with teachers in secondary school. Her ambition is to motivate the pupils by using discussion and dialogue as method.

The best teachers I've had have been social science teachers, so that's probably why it got to be social science. [...] it feels as though I got a lot of responsibility. I think it empowered me and all the other students. (Kaisa)

Klaudia

Klaudia's ambition is to teach language and visual arts to pupils in secondary school. Klaudia has always enjoyed esthetics and has grown up in a family with artists.

[...] think art is a lot of fun really and I want to work with art, I'm sort of an artist.
[...] am probably not disciplined enough to work with it. I think I need a bit of:
"Now I'm going to work, in the morning, and now I'm going home". (Klaudia)

Besides her own young child, her interest involves school children with disabilities and questions of equality. In secondary school, she got support from a specialist teacher who assisted her by structuring and planning her school activity. This helped her a lot, because she

has always enjoyed school. Most nights she studied past midnight, which made it very hard for her to keep up with the rest of her classes during the middle level of the compulsory school.

Already when I started fourth grade [...] I kind of needed more time compared to the others and I could simply be up all night, I was staying there until I finished. I was up until one or two at night [...] I needed a lot of time in secondary school as well, I was up a lot at night, almost every night, at times. (Klaudia)

Her ambition in becoming a teacher is manifested in her earlier relationships with teachers; she mentions several important people throughout her education as a youngster. She recons that a good teacher is caring and kind but also structured and motivating.

Yes, I liked our teacher in fourth, fifth, sixth grade a lot. And still when I see her I just want to go up to her and hug her, and I do, because she's so nice. (Klaudia)

Kristina

Kristina has been politically active for several years. Her driving force is equality and she is the mother of three children. The experience she carries from secondary school is that she was really tired of going to school, which made her dropout before graduation.

[...] there were a lot of other things that I thought were more important in life. [...] So when I started upper secondary school I sort of lagged behind, and I guess I couldn't...yes, I couldn't get to where the others were at, and then you simply couldn't be bothered with it because you couldn't manage [...] but that came back to me later, because I had to do upper secondary all over again in adult education. (Kristina)

She later completed a nurses training program at Komvux⁵ and worked for four years in health care where she got engaged in the trade union. She started training union representatives which led her into politics. During her political career she was engaged in

⁵ Komvux is a Swedish municipal adult educational form

developing agreements of co-operation, individual payment systems, and plans of equal treatment for schools.

Through my work for the union I trained as a union representative and a lot of people said – But, god you should become a teacher. – Never! Ugh, no I could never do that, I cannot see myself as a teacher. But the more I worked with this, the more I enjoyed it. (Kristina)

Now, after five years of parental leave, her ambition is to become a secondary school teacher with a specialization in English. She strives to be a flexible and open minded teacher, who acknowledges every individual for who they are and tries to facilitate their learning process by providing instruments and by developing an interest in the subject.

As a teacher I think you need to be every flexible, I think that's the hard part, to sort of include all pupils. Because we are all on different levels and we pick up knowledge, we all pick up knowledge in different ways. (Kristina)

Maja

When Maja was attending third grade at junior level of compulsory school, she was told by her teacher that she had difficulty in reading and writing. Ever since this experience, she has been struggling with confidence regarding her school performance.

She told me, because my reading was very jerky, that there basically was no point to go on reading, in the middle of the sentence. And that hurt, it really did. [...] quit upper secondary, the second year I think it was. I was taking a two-year course to become an assistant nurse. I think I quit sometime in the beginning of the second year, because I sort of felt useless since I thought I was doing so poorly in school. I still found it very difficult to read and difficult to understand and keep up. (Maja)

She quit secondary school and started working at a car manufacturer where she stayed for five years. She completed her nurses training program at Komvux and a psychiatric nurses training program before starting to work at the special school for mentally retarded children, where

she stayed for four and a half years. She is a mother of four children and her ambition is to work as a recreation instructor at a multicultural school to support teachers with a social perspective on development.

I think school forgets how important kids' leisure time is. It's so incredibly important in order to later being able to do stuff in school. [...] And that you can reach a lot of these goals you're supposed to reach in school during your spare-time in a more relaxed way. (Maja)

Therese

Therese has been told by her friends and family that she is great with children. She is currently living with her parents while studying to become a secondary school teacher with a specialization in the Swedish language.

To a certain degree it's the teachers that you've had who have influenced you. The one's who've been good or bad. You want to be like that teacher or absolutely not like that teacher. But then I've always been interested in children and learning and stuff. People around me have always said that I ought to work with children. (Therese)

During her period in secondary school, she gained experience through the 15 weeks of work placement aimed towards pre-school and the special school. She has also worked as a substitute teacher during a summer. Her ambition is to be the kind of teacher who listens to what everybody needs. She and refers to a teacher in mathematics she had during upper level of compulsory school, as an example.

Maths class was a bit more personal. You didn't just sit doing sums in your book but you could also do puzzles and discuss things, the focus was not only on calculating in there. (Therese)

A good teacher, according to Therese, is a person who listens to and who teaches pupils that one can have an opinion of one's own.

[...] to teach them to respect everything and everybody. That everybody is entitled to their own opinion and then having basic knowledge of the different subjects. So that they do alright and so they understand why they should learn. That's important, isn't it? (Therese)

The activity systems

University

During the first six months of teacher training, the theoretical perspectives to be gained were some general theories about child development and social psychology, communication and equality.

On the previous course we talked about those who have difficulties, perhaps dyslexia or concentration difficulties or things like that. And it was really interesting and lots of great tips. There were a lot of thoughts after that particular lecture, so to speak. (Klaudia)

In their first course the students received an assignment to write an essay together as a group of 4-5 students. This group was to be working together in different exercises in the upcoming courses of the first term. The exercises were mostly writing papers and performing dramas in front of the class – trying to visualize a certain dilemma related to a specific theme discussed in the current course.

When you write an assignment together you have to try to join everybody's thoughts into one text. [...] anyway, it feels as if the other girls have been a huge support, because we've often been able to discuss things to reach an answer. (Klaudia)

In addition, there were individual papers to write as well as lectures and seminars to attend. The final course of the first term ended with their first classroom examination. During their second term the students started their specialization courses. This resulted in the initial group constellations to break up and new groupings to merge – on the initiative of the students themselves.

The basic structure of the university as an activity system (depicted in Figure 2) describes the different prerequisites that the students are faced with on campus, and the relations between the different elements of the system – which may generate contradictions during the students learning process.

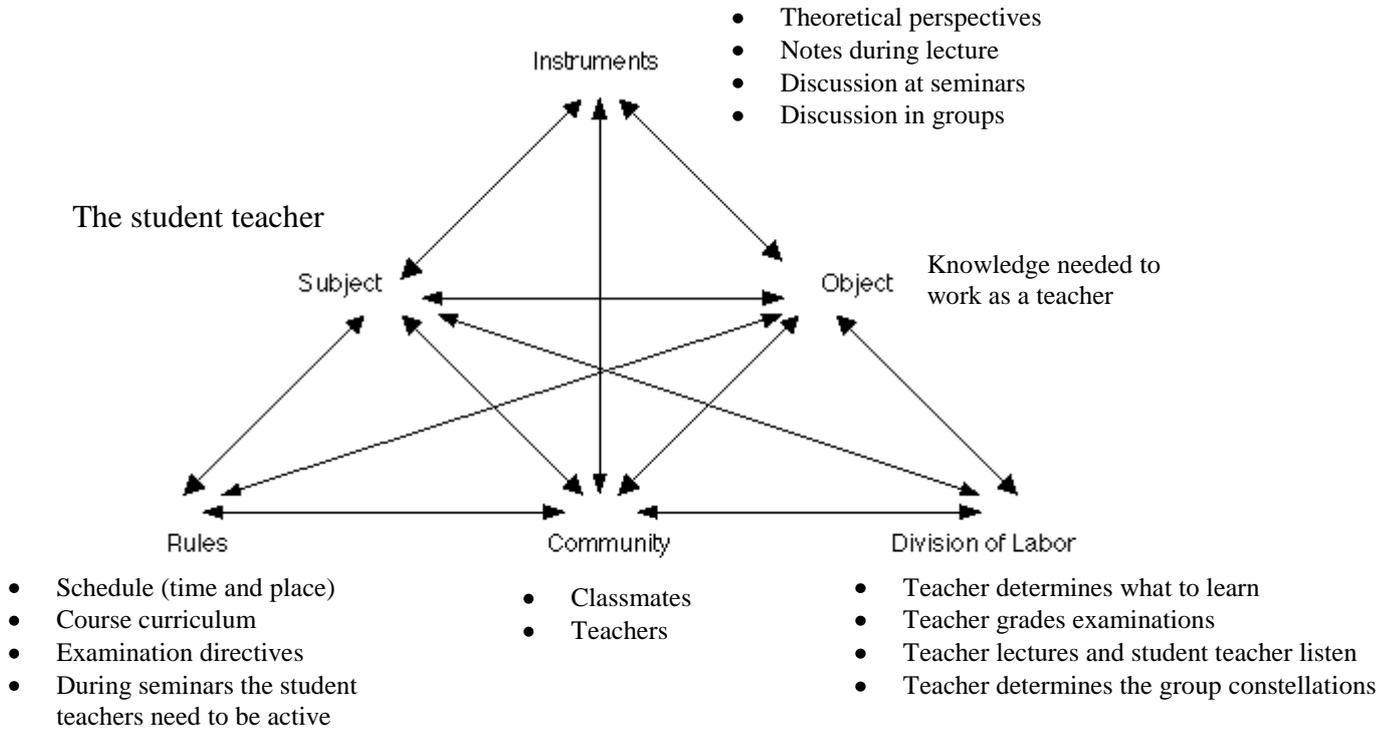


Figure 2. University as an activity system

Contradictions on campus

Contradictions experienced on campus are often related to the demands, or rules, placed upon the students in relation to their experienced range of possible instruments.

[...] I guess from the university's point of view we do a forty-hour week here. But it's not really that way in reality and I find sitting down hard. From when I pick the kids up to when they go to sleep I can't sit and engross myself in course literature, I need to take care of the kids. So I get a lot of late nights and early mornings. (Kristina)

The rules are often simple: read the literature, participate in class, and complete the examination in order to move on to the next course. But sometimes these rules collide with the students' personal circumstances or they experience the literature less motivating.

For me, the first course was very irritating and hard, because there was a lot of talk about normal development, the normal child, normal pedagogics. I was pretty angry at times when I left. You have to get the basics of course. Don't know if I learned that much. [...] we were doing a role play and were supposed to do theatre and stuff. I didn't get any of it, I only thought it was a major pain and embarrassing and didn't really involve myself in it either because I had a very negative attitude. Just thought, "what kind of nursery is this?" (Maja)

Because of the quantity of students participating in the teacher training program, there are a lot of different experiences and attitudes gathered during class. This may lead to contradictions during discussions where opposites and different points of views are revealed (Engeström, 2001).

I'm not a person who talks a lot in class, I often choose to keep quiet [...] There are so many who haven't gotten that far and you can clearly feel it. [...] they have a somewhat pink and fluffy view of reality and of course they will get... Sure, if they get a good placement and a good supervisor, but then when they get out and don't get such a workplace it won't last very long. (Maja)

Work place

The first period of work placement occurred during the first course at campus and lasted for two weeks. This period consisted of an assignment to observe their respective supervisor at work, and especially his or her approach to the pupils during class. The students were placed at a school and together with a supervisor related to their specialization of choice, but they were able to choose if they preferred one school over another.

During our first placement we mostly had to sit and study [...] walk around in the classroom a bit and help the pupils in certain subjects and so on. [...] but of course you were really nervous as well. I had been to meet the supervisor for my

placement about a week earlier and she had warned me about the school being very unruly. (Klaudia)

The second period of work placement took place in the middle of their second term. This time the students were to actually lecture the pupils in their subject of specialization. During five weeks they could observe their supervisor and assist him or her in the daily work as a teacher. Some workplaces were able to supervise more than one student teacher – which made it possible for these students to discuss and collaborate on some assignments given by the supervisors.

So it was the second time I was back, when I had gotten to know them a little bit. So I think in week three I recognized that I was in a position of trust, so to speak. Because there were a lot of kids that came to talk to me, they were on a familiar footing while playing. (Maja)

The basic structure of the workplace as an activity system (depicted in Figure 3) describes the different prerequisites that the students are faced with during work placement, and the relations between the different elements of the system – which may generate contradictions during the students learning process.

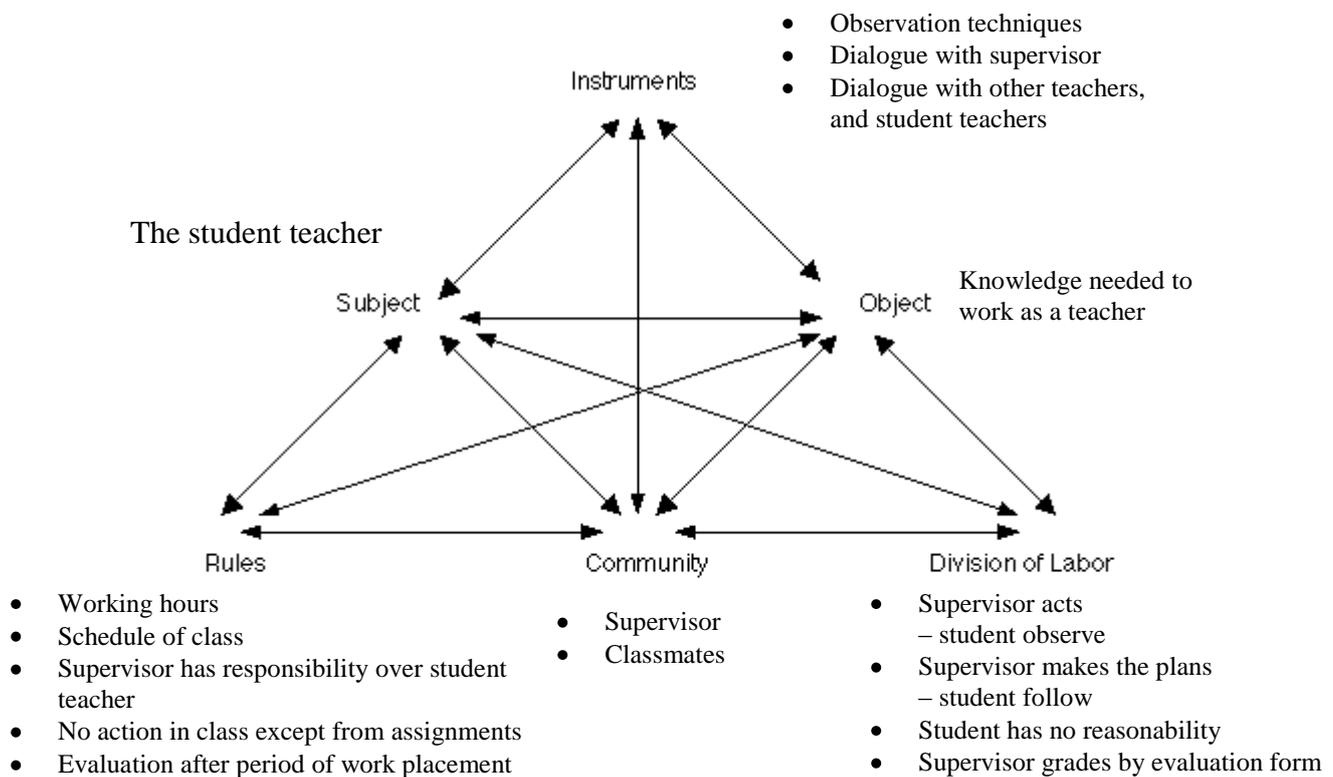


Figure 3. The workplace as an activity system

Contradictions during work placement

Various contradictions occurred during their time of work placement and were often related to the relationships between available instruments and the motive of teaching in class.

[...] we don't get any help now regarding how to teach. So now it's just to learn. And I guess I miss that a bit, not getting to know how to do things. Get some methods, you can do it this way. Because that's what you're going to concentrate on, getting as many alternatives as possible. (Therese)

A lot of questions arose regarding how to actually teach the pupils the curriculum. And even if they were confident with a method of teaching, they found it difficult to reach out to every pupil in class.

Of course I can't see everybody, there's no chance, and you have to realize this as an educator, that you can't hold individual education or lessons for every child, but rather have to see the group. But you can see the individuals in the group, you have to speak to the whole group. (Maja)

The periods of work placement contains a lot of socializing to become a member of the working team of teachers and to be accepted by the pupils in class (Lave & Wenger, 1991). This process is causing some problems for the students, who want to learn as much as possible during the few weeks of participation.

I think you need this placement period to establish a good relationship, so you dare to take that step and maybe assert an opinion. Because now you don't know how it will be received and you'd rather not cause a scene. [...] That's what is a bit difficult when you get to be on the same placement for four years, you want to keep a good relationship so that it is still fun. (Kristina)

The contradictions embedded are related to their own beliefs and attitudes towards their supervisor and the fact that the supervisor is the one grading them after each period of work placement. They have to rely on the importance of a good relationship with the supervisor to learn as much as possible and to become a legitimate member of the community of teachers (Lave & Wenger, 1991).

Contradictions between the activity systems

One of the most important contradictions experienced during boundary-crossing between the two activity systems were the differences in their personal character. On campus their character is clearly of a student who is supposed to learn from the teachers; however, during their periods of work placement, their character changes to be more of a teacher role during class and an apprentice role when interacting with the supervisor (Nielsen & Kvale, 2000). This makes it difficult when completing the assignment formed by the teachers on campus.

You feel very foolish to begin with, because I know that I ran after him, I ran with him to the toilet once and he said - "No, I want to be here by myself." - "Yes, yes, ok", so you feel like a player of Simon Says who is just following, you just don't have the self-confidence [...] And then I don't know, the supervisor wants to read my placement report. But I don't think he wants to really, he's just not aware of it. Because I've written what I think about him as a teacher in there and he might not think that's all that much fun to read. (Kristina)

The assignment is shaped to focus on a specific phenomenon or task during the period of work placement and stresses to the students to integrate a theoretical perspective in their discussions of the experiences gained. This may serve as a boundary-object to facilitate developmental transfer (Tuomi-Gröhn, Engeström & Young, 2003). However, because of this narrow focus some personal important perspectives or experiences are being put aside; which can be experienced as frustrating among the students.

When you've handed in your placement report, we start doing something else, so it really feels as if we end at the beginning, because now the interesting bit... This is what you want to see, I want to read the others' placement reports, what their experiences were, what problems have they brought up? (Kristina)

When it comes to transforming theoretical perspectives or methods into use during their practical periods of teacher training, many contradictions arise. The students are taught how to do things in real work life and what kinds of perspectives are important to endorse; but when they have to actually perform, they discover that the activity of teaching is much more complex than what was taught during lectures on campus or in the literature referring to the subject. One example of horizontal development was presented by Kristina, who gained information about some emerging contradictions by seeking assistance of teachers during a coffee break (Tuomi-Gröhn, 2003).

I started a discussion on grades. And I think a lot of teachers reacted to that, because they said that it was terrible that you don't learn how to grade during teacher training. Because that's something that you do and it's what most people find the most difficult [...] there is shortage of time, the classes are too big, there are a lot of things that affect that it's not always possible to do as it says in the books. [...] then some teachers said - "We have seen so many teachers, newly qualified teachers, who break down during their first year". - "But why do they?" - "Well, because they try to plan, get hold of materials, make materials for all their classes and it's overwhelming". (Kristina)

When discussing the contradictions Kristina discovered she was faced with a new dilemma presented by the teachers. This insight served as a turning point and resulted in a new perspective on knowledge needed to work as a teacher (Engeström, 2001).

Developing learning strategies

When contradictions arise, they represent motive to the learning process (Nilsson, 2003); however, the strategies of transforming these experienced contradictions into individual knowledge differs among the students. The main mechanism that decides the direction of the potential learning process seems to be the individuals' experience and personal attitudes of the activity wherein the contradiction arises (Husserl, 1980). One could say that the closer the action is to the personal interest of an individual, the more likely that a developmental transformation will occur. This is one way of interpreting the zone of proximal development (Tuomi-Gröhn, 2003). The opposite, is if the action is not really of any importance to the personal interest of the individual. This does not necessarily mean that learning is not taking place, but the transformation of the experienced contradiction is probably not reflected upon – which can only lead to adaption and adjustment (Ellström, 2005).

Reflection is the first step in an individual process of development. When reflecting on a phenomenon, new ways to address a certain contradiction may arise (Engeström, 1993; 2001). Besides questioning the context wherein the contradiction is or challenging the emerging contradiction through these new ways of action, development can be achieved by reflecting on other individuals' questions and processes of challenge.

When listening to other peoples points of view, one gathers several perspectives and ways to explain different phenomena (Tuomi-Gröhn, 2003). By listening to a more competent worker or teacher the student gains methods or ways to structure, for example a lecture, in an effective manner. The knowledge needed can easily and quickly be apprehended, and problems can be avoided by listening to other peoples' experiences.

In the beginning, my supervisor emphasized: "Start every lesson by telling them about your expectations of their behaviour and what we are going to do". And she really did, she started every single lesson with that. [...] think it gets easier to keep

in control, or how to say it. That they knew what was expected, so I think I will keep that in mind, I thought it was very good. (Klaudia)

The different learning strategies, through which the students gain the knowledge needed to become a teacher, can be understood as questioning or adjusting respectively challenging or imitating. The underlying mechanism which decides the potential for each learning strategy is the possibility of reflection during various actions within an activity. The various actions can be described as interpretations of the context and as performed actions within the contexts. This results in a scheme depicted in Table 1.

	Interpretation	Performance
Reflection	Questioning	Challenging
Non-reflection	Adjusting	Imitating

Table 1. Learning strategies emancipated from the empirical data

Questioning

When the students experience contradictions related to their prior conceptualization of a certain phenomenon or theory, they may start questioning their own beliefs or the context in which the contradiction is embedded. This process can lead to a complete alteration of attitude if the individual is confronted with new perspectives that better reflects his or her fundamental beliefs – an example of what Engeström (2001) conceptualizes as expansive learning. Maja describes such a turning point in her process of becoming a professional teacher (Engeström, 2001; Nilsson, 2003).

Because I was a bit frustrated there for a while: "what am I doing on this course, I'm not going to get anything out of this". That's changed a lot, but it depends on how I read the books now, what I choose to learn from the books. (Maja)

On the other hand, if (s)he is not convinced of the emerging perspectives, (s)he may start investigating the context to find answers that could explain the emerging contradiction and possible solutions to it (Engeström, 2001). Kristina, for example, refers to a situation during her second period of work placement when she was observing a teacher grading the pupils' presentation performances in class:

You're supposed to look at what they achieve, but she adds personal traits into it. So she gave him a pass with special distinction just because she thought he performed well based on what type of person he is. [...] I reacted strongly against that, that you put so much else into the grade than the actual achievement.
(Kristina)

Kristina discovered that the action of grading performances in class is more complicated than she was aware of. The fact that the teacher includes personal qualities to her grading process contradicts with Kristina's notion about equality.

Challenging

When using the learning strategy of challenging ones attitudes or routinized actions, the individual puts him- or herself in an action or situation in which he or she is unfamiliar, or at least to some extent interested in but not familiar with the complexity of the situation. This resembles what Tuomi-Gröhn (2003) describes as the process of boundary-crossing.

To sit and observe the same person for five weeks, that does nothing for me. It's enough to sit for three days with a teacher for observational purposes to see a bit of what he's like and what he uses. [...] that's why I made my own materials now, partly because the book wasn't particularly interesting, but above all I wanted to learn: "Okay, how hard is it to make materials? [...] it took a long time. Because it's easy to think that correcting a vocabulary list isn't all that difficult. No, perhaps that's what you think, but when you're doing it "Well, he's just forgotten an E, how do I correct that? (Kristina)

When challenging ones attitudes the individual is open for external stimulus and tries to interpret his or her own beliefs through other individuals' perspectives and experiences.

Adjusting

By adjusting to, for example a culture or a collective norm in an activity system, one may more easily become a legitimate member of the community and participate in collective actions (Lave & Wenger, 1991). Another example when adjustment can be a strategy for learning is when there are few alternative ways of solving a problem or when time hinders from using ordinary and well tried actions.

We were supposed to discuss a lot but in the end we hardly discussed anything. We couldn't agree and it was chaos, so it ended with us writing the assignment the same day it was to be handed in. [...] I was often very passive towards the others. Tried to adapt and simply make the best of the situation. (Kaisa)

Imitating

Occasionally actions are needed to be more effective and less time consuming. An excellent way to adapt a new method quickly is to observe and imitate a more competent teacher when (s)he is demonstrating how the method could, or should, be practiced (Nielsen & Kvale, 2000). This is a strategy where reflection is not crucial and can result in routinized actions or operations (Tuomi-Gröhn & Engeström, 2003). By imitating the different elements of the action, time can be used to polish the details of the method, instead of finding the best practice on one's own.

We've received a couple of handouts that you do in fifteen minutes. And you have a key so you can correct it. [...] we have been working together once a week [...] it's probably been the most instructive to get help from each other. [...] she [the supervisor on placement, my note] worked a lot with handouts. Started by explaining what it is [...] I probably would, they could sit in groups [...] to be able to help each other. [...] of course you'd have to do the main things, first explain what everything is and how to do it, but they can work in groups. (Therese)

Conclusion and discussion

The results

The results have shown that the students' processes of learning, includes four distinct learning strategies to transform the information given in various situations (questioning, challenging, adjusting and imitating). These strategies are consequences of prior experience and personal interest of a particular situation. The strategies of questioning and challenging are enabled when reflecting in actions. They are often triggered when experiencing contradictions in a specific activity and are closely attached to the concept of expansive learning (Engeström, 2001). The strategies of questioning and challenging are used when contradictions cannot be solved using routinized actions, or operations, and may transform into developmental learning (Ellström, 2005; Engeström, 2001).

Because of Maja's prior experiences of teaching in special school, she found herself less motivated when reading the literature presented at the initial courses of her teacher training program. When questioning her motivation to complete the program she realized that if she widened her perspectives while reading the literature, she actually found new ways of comprehending the theories presented. Another student, Kristina, met contradictions, between theory and practice, related to her foundational beliefs concerning equality when, parallel to a senior teacher, grading the pupils' performance in class. By questioning the teacher's process of grading, she was faced with a greater complexity, than imagined, involved in the activity of grading performances in class and new contradictions emerged when widening her perspective (Engeström, 2001). She questioned the whole grading system where other aspects than the pupils knowledge was intertwined.

The learning strategy of challenging was also described by Kristina as a process that merged from reflecting on a contradiction. When assigned to perform a lecture during work placement, she found that the existing instruments to achieve the planned outcome were unsatisfactory. She then found herself questioning the complexity of constructing her own material. By challenging the unfamiliar situation and actually constructing a material from scratch she discovered that it was really time-consuming. This made her realize the importance of gathering as much material from the supervisor as possible to build a portfolio during the teacher training period.

The other two strategies, which are not dependent on the possibility of reflection, are adjusting to the information given or imitating actions within an activity. During work placement, Therese noticed that the supervisor was teaching the pupils the basics of grammar exactly as the lectures were shaped on campus. Although she met some contradictions related to the individuality of the tasks given and her need of support, she argues that this is probably the way she would perform a lecture in grammar too. By imitating the action of the teacher on campus and the supervisor experienced during work placement, she learned how to teach grammar in a way she felt confident about. Adjusting to the context can also be understood as a strategy to avoid contradictions. Ellström (2005) describes the process of reproductive learning as a way to reduce variation and complexity and to promote homogeneity in everyday activities. Reproductive learning develops from methods or strategies, like adjusting and imitating, that we are familiar with. The students refer to various situations when this strategy is induced, especially when interacting with the supervisor during work placement. When crossing the boundaries of the two activity systems, they have to adapt to the rules and the division of labor present in the activity. When entering into the new context during work placement the students find themselves in a situation that calls for socialization and gaining acknowledgment from the teachers in order to become a legitimate member of the community (Lave & Wenger, 1991). Kaisa also found this strategy of adjusting appropriate when working together in her study-group on campus.

It seems that the strategy of adjusting to the context is crucial when contradictions arise between the rules and the ways to divide labor within a community, on campus as well as during work placement. This can be understood as an important prerequisite for the students in order to facilitate collaboration. This is fine, but it only constitutes the foundation of potential expansive learning within and between activities (Engeström, 2001).

As Tuomi-Gröhn, Engeström & Young (2003) argues, expansive development is a result of collaboration through a mutual boundary-object as well as via emerging contradictions. When sharing a collective purpose different perspectives are necessary to develop innovative solutions and overcome emerging contradictions. This calls for a constant reorganization of the activity including the ways to divide labor as well as to develop new conceptual instruments by seeking assistance in peripheral activities. This is facilitated by the boundary-crossing between campus and the workplace (Tuomi-Gröhn, Engeström & Young, 2003). The

assignment completed during work placement and discussed at seminars on campus can be understood as an important boundary-object to facilitate cooperative development among the students during their teacher training.

There are, however, some implications on the assignment as a learning opportunity. Kristina refers to the difficulty of narrowing her experiences and important findings, during the periods of work placement, into the theme of the course attended on campus. She describes a contradiction between the centralization of knowledge creation on campus and the decentralization of knowledge creation and parallel learning processes taking place during her periods of practice. She experiences the seminars as having a potential of integrating different perspectives and enabling horizontal expertise via the shared assignment.

During the student's journey along the teacher training program, they learn how to become professional teachers by using, at least, four different learning strategies. The strategies are enabled in relation to various contradictions met while acting in different activities on campus or during their periods of work placement. The fact that their process of learning contains all four different strategies implicates that there is a dialectic relationship between the processes of developmental- and reproductive learning as to the students' prior experiences and their foundational beliefs. When developing new perspectives, new contradictions emerge – which need to be solved either through regression or via expansion (Nilsson, 2003).

The methodology

This thesis was inspired by the phenomenological method of conducting research; which affected the design of the entire case study. This does not mean that my intention was to grasp the wholeness of the tradition, but to create a frame into which my research questions could, in my opinion, best be explored. This obviously generates questions of bias; if the results would have been different, using a different methodology.

To explore the strategies students' use, by investigating their experiences, when crossing the boundaries of the university and the workplace, I used a qualitative approach. This approach aimed to capture the dynamics of the collected empirical data, and to try to understand the respondent's experiences in relation to the different contexts. The hermeneutic way of interpreting a phenomenon due to its different elements – and their relation to the

phenomenon as a whole – made it possible to understand the respondent’s individual experiences, as part of a collective process of learning. By aggregating the respondent’s experiences, a structure of the two activity systems (the university and the workplace) emerged – in which emerging contradictions could be traced and understood against. The phenomenological approach stresses the notion that a phenomenon needs to be interpreted using different perspectives. Regarding the population of this case study, consisting of five students, it is obviously not a lot of respondents, furthermore, not a wide range of perspectives to describe a phenomenon. However, the aim of this thesis was not to explain the students learning processes, but to provide an understanding about the relationship between reproductive- and developmental learning, when students are learning in different contexts – at the university and at the workplace.

Furthermore, because the interviews were conducted in Swedish, the quotes used in the thesis had to be translated into English. To reduce the risk of false translation and to capture the essence of the respondent’s statements, the quotes were translated by an English-speaking person. However, this process of translation may be understood as losing control over the empirical data, but when reviewing the translated quotes I feel confident about their contents and that the respondent’s statements benefit from this accuracy.

Some final remarks

This case study represents five student teachers and their different experiences prior to and during their teacher training program. The aim of this thesis was to explore the contexts wherein the students are acting to better understand their process of learning, when crossing the boundaries of the university and the workplace, in this thesis regarded as WIL.

Concerning the argument stated in the introduction – whether WIL is to be seen more as a means to facilitate employability rather than generate higher levels of learning is clearly impossible to answer, throughout this case study. It implies, however, that by intertwining theoretical studies with periods of work placement, the students experience various contradictions which probably would not occur during regular theoretical studies. These contradictions have proven to affect the use of different learning strategies – which in some cases have resulted in a wider perception of the meaning and complexity of the work as a teacher. If this thesis is somewhat correct my conclusion is that – work integrated learning

facilitates and may increase the probability of employment after graduation, but not only because the student learns to adjust to the needs of the labor market. Via collective boundary-objects between the university and the labor market there are possibilities of developmental and expansive transformation – which can facilitate higher levels of learning of the individual, as well as the collective activity systems.

This calls for future research, concerning the possibilities to facilitate boundary-crossing and development of boundary-objects, and to enable higher levels of collaboration within and between activity systems. We have seen, in this thesis, some indications on the importance of maintaining a good relationship with the supervisor, during the periods of work placement. But are the supervisors aware of their important role, as a role model, in the students learning process, and how do they experience the collaboration with the university?

Another important question concerning developmental transformation is how the university and workplace apprehend the experiences mediated by the students. This thesis implies that the students gain a lot of experience during their periods of work placement but these experiences are not adequately discussed during the seminars and therefore not transformed into a collective process of learning. During the periods of boundary-crossing, the individual student can be understood as brokers – carrying various experiences between different contexts – and this emphasizes the possibilities of collective development between and within the activity systems wherein the student is acting.

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