

Challenges in supporting and assessing bachelor's theses based on action research in initial teacher education

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Abstract

This study explores the challenges in supporting and assessing action research projects related to bachelor's theses for research-based initial teacher education in Norway. The data consist of two types of texts – the official information about the bachelor's thesis from the university and 10 theses where the students complained about the assessment. The results are considered by using a theoretical framework of assessment as a process of communication and by applying the concept of boundary crossing. The results show the lack of communication and tripartite collaboration among students, practicum teachers and university teachers as presupposed. Communication and democratic dialogue are crucial elements of action research, and the findings suggest that the assessment process should focus on 'feedforward' in an open dialogue more than 'feedback' through written texts or marks. Our research findings add to the knowledge on the design of research-based programmes of study in general and assignments based on action research in particular.

Keywords: initial teacher education, action research, assessment, research-based teacher education, bachelor's thesis, study design

Introduction

According to Zeichner (2014), two strategies for the design of initial teacher education (ITE) programmes have been at the forefront. One aims to strengthen the dominant university-based system of ITE, whereas the other intends to promote greater deregulation and privatisation, with shorter teacher training routes being taken mainly in schools. In Norway, ITE follows the first strategy, extending to a new reform that started in August 2017, from a four-year programme at the bachelor of arts level to a five-year programme at the master of arts level. This change is inspired by the research-based Finnish ITE, whose purpose is not to educate researchers or even teacher-researchers per se but 'to acquire an inquiring attitude towards teaching. Thus, teachers are able to observe, analyse and develop their work' (Toom et al. 2010, 339).

According to the Norwegian national curriculum for ITE, the education shall be based on research and development (hereafter, research-based education), and the students' theses shall

be relevant to their future practice in school (The Norwegian Ministry of Education and Research 2010a, 2013). Bridging learning between practical placement in school and coursework is a recurring problem in teacher education studies (Ellis and McNicholl 2015). Further research is needed about what a research-based programme means for students' development as professionals and for the epistemology of teacher education. At UiT The Arctic University of Norway (hereafter, UiT), a core element of ITE is an action research (AR) project, which the students undertake in their practicum placement as a point of departure for the bachelor's thesis. The bachelor's thesis is based on the idea of AR supported through partnership, and the students are expected to demonstrate, describe and analyse the AR process in their theses.

As re-assessment examiners, we have reacted to the amount of students' complaints about the assessment of their theses. The assessment is currently in the spotlight for its poor ratings in student satisfaction surveys and 'under performance' in quality reviews (Price et al. 2011). The number of complaints in our case represents one-third of the graduating students in ITE at UiT in a specific year. It is a question of whether the students have understood the expectations for the assignment and how they relate to the task. The official information from the university is central to the students' work. Our hypothesis is that the students perceive the results of the assessment process as unjust in relation to their efforts in school and their theses.

In this paper, we elaborate on *what the students' complaints regarding the assessment reveal about the set of challenges in supporting and assessing the AR project as a point of departure for the bachelor's thesis*. We scrutinise the texts that represent the university's official information and examine 10 theses (based on the students' enquiries into their own teaching) where they complain about the assessment. Our research results add to the knowledge about the design of research-based study programmes in ITE in general and assignments based on AR in particular. The findings also contribute to the knowledge about assessment in ITE and in a broader sense, to higher education.

Literature review

The understanding of the research-based concept in the design of study programmes varies. Consequently, we need to delve into the actual discourse in relation to not only teacher education but more generally, to curriculum design.

Research-based study programmes

In 2005, the OECD published a comprehensive report called *Teachers Matter*, which focused on the importance of strengthening ITE in general and research-based competence in

particular. In a study on the role of research in ITE, the BERA-RSA (2014) concluded that teachers and teacher educators should be equipped to engage in enquiry-oriented practice. This is understood as the capacity to investigate what works well and what is not fully effective in someone's own practice (BERA-RSA 2014). As Niemi argued as early as 1990 (as quoted in Sandén and Wikman 2010, 36), research-based teacher education should focus on research, not only about the school but also in the school. This position is in line with the tradition of AR, which is the point of departure for the bachelor's thesis at UiT.

Action research is often summarised in a spiral model comprising planning, acting, collecting data, observing, reflecting, analysing and planning for new actions (see, e.g., Carr and Kemmis 1986). Building on Stenhouse's (1975) ideas about teachers as researchers, teachers should alternate between the positions of teaching and observing to establish their distance from everyday practice and be able to identify, investigate, criticise and change explicit and implicit assumptions underlying classroom conduct. In the Nordic tradition, school development has been nurtured through dialogues characterised by actors sharing and participating in the social production of knowledge (Rönnerman et al. 2015). As facilitators, researchers are usually involved in collaborative work in everyday practice in schools. The Nordic Network of educational AR (NNAR) (op.cit.) coined the phrase 'collaborative and action research', which has the potential to advance beyond the dichotomy of theory and practice. Collaboration and democratic ideas are highlighted 'in the interchange of knowledge of different kinds' (Rönnerman, Salo, and Furu 2008, 277). The ideas can be recognised in 'the social-democratic project in Nordic countries: to build trust between different partners which gives a solid platform for working together to handle issues and dilemmas' (Rönnerman et al. 2015, 7).

Assessment feedback as a process of communication

Our theoretical point of departure in this study is that assessment feedback is a communication process (Higgins, Hartley, and Skelton 2001), and it is a question of whether the students care only about their grades or are committed to learning for the profession. This issue depends on communication among the three actors – the student, the practicum teacher and the university teacher. In the following paragraphs, we use the concept of the practicum teacher as the one responsible for the students' learning and professional development during the practicum period, while the concept of the university teacher refers to the supervisor at the university. We thus explore how the assessment process and collaboration are described by the university in the specification texts and how this tripartite collaboration is carried out in practice.

Previous research on communication proposes several important principles that affect the way that feedback is received and interpreted. How these variables influence tutors in their actions

and students in their reactions has not been sufficiently investigated in the research on assessment practices. In current research, assessment feedback is characterised by an over-simplified model of communication that reflects early theories of information originating from the 1940s (see Shannon and Weaver 1949). ‘Communication is seen as the linear transfer of information from the sender of a message (the tutor) to a recipient (the student) via a medium (usually written comments)’ (Higgins, Hartley, and Skelton 2001, 271). Versions of this over-simplified model of communication are heavily criticised in existing research on human communication (see Craig 1999) because this view is often reflected through an ‘outside-in’ focus on external interferences and hinders the assessment feedback process.

Higgins, Hartley, and Skelton (2001) point out the complexity of assessment feedback for students in higher education and suggest that the internal dynamics of feedback as communication must be foregrounded in any attempt to further the understanding of assessment feedback. Feedback needs to be more dialogical and ongoing, that is, focus more on ‘feeding forward’ rather than ‘feeding back’. Because communication and democratic dialogue are crucial elements of AR (Rönnerman, Salo, and Furu 2008), we could expect an ‘inside-out’ rather than an ‘outside-in’ approach to the assessment of the bachelor’s thesis. This implies more open discussion, collaboration and negotiation among the actors to reflect on, question, make explicit and share competing understandings.

Price et al. (2011) identify multiple purposes of assessment and its many roles in the students’ learning experience. They have investigated fundamental premises relevant to good assessment practice. We find two of the premises of special relevance to our study, focusing on the set of challenges in supporting and assessing AR and learning projects as a point of departure for the bachelor’s thesis. First, assessment must concentrate on learning rather than marking and measuring. Second, learning is more effective when students understand the assessment process. Students depend on feedback to learn more effectively. Moreover, they need to understand the expectations for their work and how it will be assessed.

The assessment of the bachelor’s thesis covers a range of skills and key competencies and spans two fields of knowledge: the school representing experienced-based knowledge and academic knowledge generated from theoretical studies. This indicates a complex assessment process that can be difficult for the actors to grasp. The students’ understanding of the assessment process can easily be improved by supporting their understanding of assessment tasks and criteria (Rust, Price, and O’Donovan 2003).

Boundary crossing

Initial teacher education relies on cooperation between two institutions with different tasks and knowledge bases. The university is responsible for the students' acquisition of theoretical and research-based knowledge, documented through theses and exams. The schools' main tasks are to educate young people and nurture their development as citizens. When these institutions collaborate on teacher education, 'boundary work' is a premise. Boundaries can be understood as '...social constructions which define who is included and excluded from interactions and which knowledge or meaning system is considered relevant in those interactions' (Edwards 2010, 43). Teacher education can serve as an example where student teachers can face different pedagogical values in the coursework at the university and in their practicum placement in school. 'Boundaries can also be defined as socio-cultural differences leading to discontinuity in action and interaction' (Akkerman and Bakker 2011, 133). How it is possible to establish continuity in action despite sociocultural differences is of significant interest in ITE.

Boundaries are important to organisations but can be uncomfortable places (Keruso 2003). Some challenges are obvious in ITE because the students' development as teachers depends on crossing the boundary between the two knowledge fields of school and university (Zeichner, Payne, and Brayko 2015). However, these fields are also fundamental for the future teachers' knowledge base. Two well-known learning theories – the cultural historical activity theory on expansive learning (Engeström, Miettinen, and Punamäki 1999) and the situated learning theory on communities of practice (Wenger 1998) – include the concepts of boundary crossing and boundary objects. According to Akkerman and Bakker (2011), this inclusion is an argument to emphasise the nature of boundaries and to explore the learning potential in the boundary zone, actualised in this present study by the partnership-based bachelor's thesis.

Methodology and methods

Contextual background

Based on the white paper, *The Teacher – The Role and the Education* (The Norwegian Ministry of Education and Research 2009), UiT has piloted a five-year integrated programme in teacher education for primary and lower secondary schools. Called Pilot in North (PiN), it is a research-based master's programme, and the first batch of 61 students graduated in the spring of 2015.

In their third year, the students write a bachelor's thesis based on empirical data from an intervention carried out during their practicum period, ideally in tripartite collaboration. The vision is that to lay the foundation for an enquiry-based perspective on their own work, the students need to participate in research-based projects involving three stakeholders – the

practicum group (of three student teachers), the practicum teacher and the university teacher. According to the specification texts (UiT 2013a, 2013b; UiT 2015a, 2015b), the practicum teachers' role is central, especially in planning and developing the students' action in practice, whereas the university teacher's function is central in the data analyses of how the students relate to theory and thesis writing. However, the project should be developed in dialogues with both the practicum teacher and the university teacher. The AR design is crucial in the students' evolving knowledge related to both research and developmental work in school.

In the third year, the students attend two practicum periods, each of three weeks' duration in the same school. The university teachers urge the students to ponder and ask questions during their first practicum period and use their critical observation skills to develop the topics for their AR projects. After their first practicum period, the students present their topics and discuss these with their peers in a seminar led by the university teachers. At the end, the topics should be presented to, discussed with and accepted by the practicum teacher and the university teacher. Each practicum group develops a joint project, and the students are normally co-authors. Data from the students' actions accomplished during the second practicum period provide the empirical basis for their work with the thesis.

Three dialogue seminars, involving all the students, practicum teachers and university teachers, are arranged during the year to lay the foundation for the tripartite partnership. These arenas for communication are resources for the advancement of common understandings, developed in structured dialogues among the actors. The methods used in the projects are based on social constructivist ideas where 'truth' is constructed through common analyses of the actors' experiences and realities (Leirvik 2005).

In their theses, the students should demonstrate their knowledge of strategies and methods for systematic enquiry-based interventions, as well as their ability to plan, accomplish and evaluate a smaller AR project based on their own actions in practice. Two university teachers (an internal and an external examiner) assess the theses and grade them from A to F, where A is the best and F represents failure. If the students want an explanation for their grades and/or choose to file an appeal, they need to e-mail the faculty member with the academic responsibility for the examination within three weeks of the announcement of the results, and their theses will be submitted to a new examination commission and re-assessed. The students are aware of the possibility that their theses could be used for research purposes, and they give an informed consent. The actual ITE is a pilot programme, which can be a limitation of the study. The type of bachelor's thesis based on developmental projects and research in practice is not well known, but it has inspired the design of the third-year thesis in the new ITE reform in Norway since 2017.

Our interest in this assessment process lies in our position as examiners in the commission for re-assessment over a three-year period. Our task has been to mark these theses according to

the Examiners' Guidelines. We are both researchers and teacher educators at UiT in Norway and the Åbo Academy University in Finland, respectively. Neither of us had been engaged in teaching or assessment of students' coursework in the actual year of the programme. Both interested in AR, we have participated in the Nordic Network of Action Research (NNAR) for several years (Rönnerman et al. 2015).

Method and analytical approach

Our analyses are based on two types of texts – the official information about the bachelor's thesis from UiT and the 10 bachelor's theses. The official information contains three specification texts: the *Course Plan for the Bachelor's Thesis* (hereafter, the *Course Plan*; UiT 2013a, 2013b), the *Bachelor's Pamphlet* (hereafter, the *Pamphlet*; UiT 2015a) and the *Guidelines for the Examiners* (hereafter, the *Guidelines*; UiT 2015b). The students, the practicum teachers and the university teachers should all be well acquainted with the specification texts. The *Course Plan* builds on the national curriculum (The Norwegian Ministry of Education and Research 2010a) and the national guidelines (The Norwegian Ministry of Education and Research 2010b, 2010c) and describes the knowledge, skills and competence that the students should acquire through the course. It also informs readers about the coursework, teaching, examination and assessment. The thesis should integrate theory and practice experiences and be based on specific actions in practice. The 17-page *Pamphlet* (UiT 2015a) aims to concretise the *Course Plan* (UiT 2013a, 2013b). The *Guidelines* (UiT 2015b) is a formal text that describes the expectations for the thesis and how it should be assessed. Although the *Guidelines* is primarily written for examiners, this official document is easily accessible to students. It is a prerequisite that the thesis be written based on formal requirements. As with the other texts, the *Guidelines* points out that the bachelor's thesis should integrate theory and practice, building on specific experiences during the students' practicum period.

As re-assessment examiners, we read the theses for assessment and marked them. The focus was on the theses as academic assignments and consequently on how the students complied with the *Guidelines*' requirements. Astonished by how many students appealed about their grades, we wrote a report to the Department of Education at UiT. We decided to further explore the 10 theses about which the students had complained so that we could find indicators that could shed light on why so many students were dissatisfied with their original grades.

Our analyses involved a two-step process. First, we used an analytical scheme conceptualising specific academic features of assignments based on enquiries in practice and AR (Figure 1).

Figure 1. Comparison between different forms of theses at UiT The Arctic University of Norway and University of Oslo, Norway. The arrow shows how students can choose to make another round in the action research spiral.

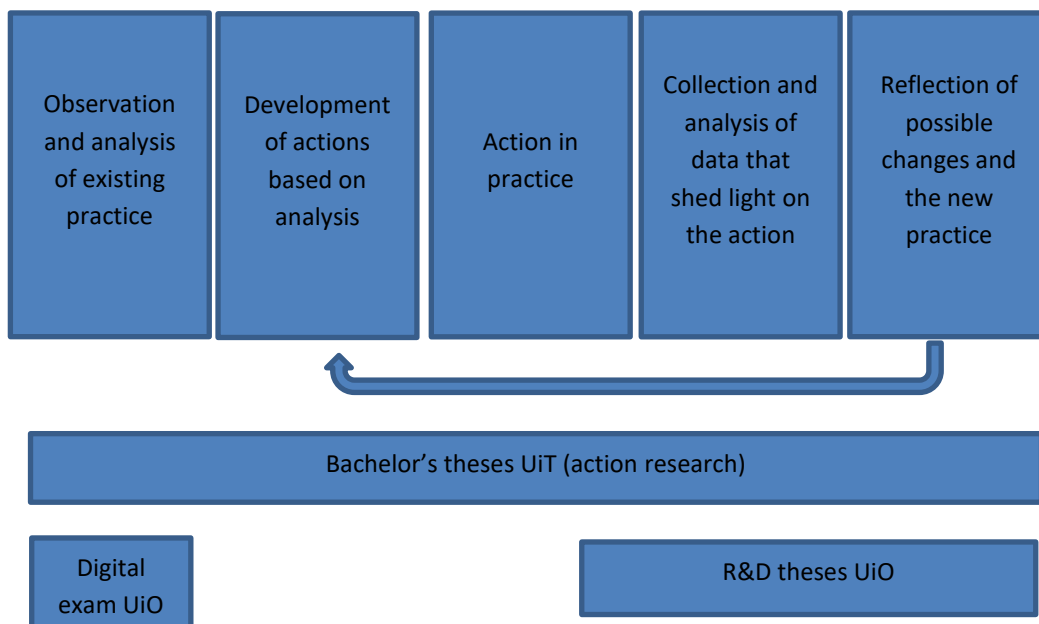


Figure 1 compares different forms of theses at UiT and the University of Oslo. The two institutions have been working together on the development of ITE in Norway for several years, and the scheme was developed for analytical reasons (Rindal, Lund, and Jakhelln 2015). The bachelor's students are expected to demonstrate and describe the AR process in their theses – from pondering, observing and analysing existing practice during the first practicum period to reflecting on and possibly making changes to the new practice. The planning and action in practice should be related to a theoretical knowledge base and guided by both practicum teachers and university teachers. The students should systematically describe their data collection and reflection on the changes, describe and analyse new actions and relate to the theory used in the discussion of the results. Figure 1 indicates that most of the academic features should be included in the bachelor's theses, so we analysed them accordingly.

This sort of thesis implies that the students should shift back and forth between theory and practice. Based on our hypothesis that the students perceived the assessment process as unjust in relation to their efforts in practice and to their theses, we decided to conduct a document analysis of the assignments and the specification texts. In the assignments, we focused on the students' experienced challenges during the practicum periods. In the second step of the analysis, we concentrated on the students' learning process in practice and with an ethnographic focus, understood the texts as cultural artefacts (Atkinson and Coffey 2009). We searched through the theses to gain a deeper understanding of the students' interpretations of the formal requirements and the expectations for the partnership among the actors, as presented in the *Course Plan*, the *Pamphlet* and the *Guidelines*.

Text analyses

The specification texts are written to ensure that everyone involved has the same information about the aim and the function of the bachelor's thesis. With many actors involved, including students, practicum teachers and principals in the schools, supervisors and the management at the university, and internal and external examiners, the probability of different interpretations of the situation and the requirements is imminent. According to Atkinson and Coffey, '... no text, whether literary or official, can determine or constrain precisely how it shall be read.... The reader brings to the text his or her stock of cultural knowledge, a knowledge (or ignorance) of similar texts, and his or her unique biography' (2009, 72).

The three specification texts build on one another, where the *Course Plan* is fundamental for the other two. These three texts also relate to national guidelines and to a national curriculum of teacher education. On the other hand, the 10 theses were written for assessment reasons and hopefully, for learning and professional development. Regarding intertextuality, Atkinson and Coffey (2009) argue that texts' referential values are often connected to other texts, and we can discuss a semi-autonomous domain of texts and documents that refer primarily to one another. 'A dense network of cross-referencing, and shared textual formats, creates a powerful version of social reality' (Atkinson and Coffey 2009, 74). Stating that '... documentary reality does not consist of descriptions of the social world that can be used directly as evidence about it', they urge that 'documentary materials should be regarded as data in their own right' (72). The documentary records must be understood as texts that represent contextual and organisational reality. To analyse the texts, we should examine the characteristic language used and how the texts persuade the readers.

By perceiving the texts as cultural artefacts, the documents should be interpreted in relation to their production (authorship) and consumption (readership), not involving the individual author and reader but the implied author and reader. Linking the issue to the rhetoric, we can ask '... what claims a text seems to inscribe, and what devices are brought to bear in order to enter the implied claim' (Atkinson and Coffey 2009, 73). In our study, we analyse texts written by university teachers for formal reasons, as well as texts that are crucial for the students' further careers. The specification texts are produced for students, practicum teachers and university teachers as implied readers, and we presume that the bachelor's theses are written first and foremost with the examiners in mind.

Results

To achieve our study's aim, we examined 10 theses based on the students' enquiries into their own teaching and scrutinised the texts representing the university's official information. We numbered the bachelor's theses from 1 to 10 according to the grades awarded (Table 1).

Table 1. Theses, grades and aims. *) Theses written by two or three students.

Thesis' number	Grade	Aims of Thesis
1*	A	To explore the possible advantages of using the digital tool Blendspace and gain new experiences on possible applications of the tool
2*	B	To build teaching based on pupils' experiences and give them a feeling of mastery through an interdisciplinary Saami week
3*	B	To didactically adopt a physically active learning process based on pupils' interests through teaching mathematics
4*	B	To set pupils in a situation where they obtain insight into their own learning and experience flow in order to promote the pupils' learning
5*	C	To investigate how teachers can integrate physical activity in different school subjects
6*	D	To develop engagement between pupils for mathematics through practical work, concrete and realistic mathematics
7	D	How to promote pupils' learning and develop the school system in general in South Africa
8	D	
9*	E	
10	E	To use a more practice-based teaching as a didactic method to develop pupils' motivation

The 10 bachelor's theses

The 10 analysed theses deal with educational and more subject-didactical questions. Most of the theses aim to use more practice-based and/or pupil-centred teaching methods in order to increase and support the pupils' motivation and/or learning process in different school subjects.

First step of analysis

Gap between the focus on practice and academic features

In the first step of the analysis, we used the analytical scheme (Figure 1), focusing on the description of the relationship between practice and theory. Each thesis that earned a grade of A or B had a clearly defined research question and assignment aim (Table 1, theses 1–4). Each thesis marked C, D or E had a less clearly defined aim (Table 1, theses 5, 6 and 10). For theses 7, 8 and 9, the actions were carried out in practicum placements in South Africa. These assignments had vague aims, focusing on how to promote the pupils' learning and how to develop the school system in South Africa in general. In the assignments marked C, D or E (theses 5 to 10), we observed a clear gap between the focus on practice and action and the focus on theory and analysis of data. It seemed that this shift from action and collection of data to analysis and reflection based on theory was difficult for the students to grasp.

We divide the theses into two categories. Under the first category, the students succeeded in practice, described their observations, actions and changes but could not make use of the theory in their discussion of the results. We exemplify this category with thesis 5 (marked C), where the students aimed 'to investigate how teachers can integrate physical activities in different school subjects'. The students described and systematically analysed all physical activities carried out in the classroom. They focused on analysing what actions were successful and what could have been done differently to increase the pupils' motivation. The students successfully described the actions and changes carried out in their AR projects. In their discussion of the results, they pointed out that motivation increased for all pupils in the class. The students stated, 'Through confirmed questions and tasks connected to the activities, we found increased learning outcomes that exceeded all expectations'. The results show that '[t]he activity should include professional content to keep the teaching standard at a sufficient level. If the activity becomes too playful, the students can lose interest'. The students neither reflected on the changes nor justified them in general terms, as is the aim of professional development. Thus, they did not discuss the empirical results in relation to theory in an academic text.

Under the second category of the theses, the students succeeded at the level of observation in practice but not at the level of an AR process. In these theses, the use of theory was weak as well. Theses 7 and 8 (marked D) focused on observing and describing the challenges in South African classrooms to bring out what changes would be needed to promote pupils' learning and to develop the school system in general. Thus, the students lacked a constructive aim. One of them reported, 'It was difficult to have a specific focus, and therefore I documented all my observations and all information I got'. The students suggested an increased control over the education budget, a more controlled and rigorous structure in school, and stronger teacher education. These suggestions were based on general observations in practice, not on the students' AR projects.

In thesis 9 (marked E), the students formulated this constructive aim based on their first practicum period in Norway: 'How can different learning strategies promote learning in South African and Norwegian schools?' Due to the cultural differences in tradition and communication, the students found it impossible to implement the learning strategies in South African classrooms. 'Our action in South Africa was unsuccessful'. Therefore, they reformulated the question to be answerable by yes or no: 'Can the use of Norwegian learning strategies promote learning in South African schools?' Based on their conceptions and experiences in South Africa, the answer was no. Due to cultural and language barriers and the lack of teaching materials and techniques faced by the students in South Africa, they did not accomplish systematic work with an AR process in their projects. The theoretical ambition was weak. They did not discuss their empirical observations in relation to theory in an academic text.

The first step of our analysis shows most of the students' inability to reflect on their results in relation to theory. It is a question of whether the students received sufficient support for their bachelor's projects and for the writing of their theses.

Second step of analysis

Weak descriptions of tripartite collaboration

As our interests as re-examiners lie in the challenges in supporting and assessing bachelor's theses based on AR, we have studied the *Pamphlet* to identify descriptions of how the different actors should relate to one another (see Rönnerman et al. 2015) to support the students' bachelor's projects. The main objectives of the bachelor's coursework are to develop the students' ability to cooperate with colleagues in practice and to perceive the meaning of learning and development in professional work. The university teacher is described as the main writing supervisor, and the practicum teacher is defined as a 'co-player in the development and accomplishment of the action in the second practicum period'. The supervisor can '... spend some of the time for supervision in the practicum school' (UiT 2015a, 11). 'The practicum teacher is not responsible for the supervision of the content of the thesis, but can contribute together with the university teacher. The practicum teacher is an important mediator for the students' realisation of the AR project' (UiT 2015a, 12, our translation).

It seems that it is not expected that the actors should all cooperate, except in the dialogue seminars. Although the *Pamphlet* mentions tripartite collaboration in different sections, it is expressed in weak terms, more as hints or suggestions. In this case, it can be difficult for the actors to relate to the advice outlined in the *Pamphlet*. Moreover, specific requirements for the cooperation are neither mentioned in the *Course Plan* nor in the *Guidelines*. Based on the specification texts, it is not easy to identify how to arrange the tripartite collaboration.

Varying degrees of partnership support

The specification texts argue for the tripartite collaboration, and the *Guidelines* claim that the partnership should be described in the thesis. Consequently, we searched for how the partnership is reported in the students' theses. Seven of the 10 theses were each written by two or three students (see Table 1). Based on the grades, the students' collaboration seemed rewarding. However, the degree of collaboration between the students and the practicum teacher varied. In some of the theses, the collaboration was strong, such as in thesis 1, in which the students described how the research partnership developed and nurtured the enquiry project. The students wrote, 'We felt that as the research partnership developed, we could increasingly take advantage of each other's skill sets. This led to new discoveries and explorations of new practical applications of digital tools'.

Andreassen (2015) has analysed bachelor's theses in the same research-based ITE at UiT (PiN). As is the case with that of Andreassen (2015), our data showed that several of the practicum teachers did not manage to develop partnership with the students as intended. In our work, thesis 1 presented an example of shared management between the students and the practicum teacher and a democratic process of close cooperation in the project design. The students wrote, 'The collaborative reflection group with our practice teacher was based on our thoughts from the recent classes and often resulted in new ideas, further development or remakes of our lesson plans'. This is in line with the first of the three categories in Andreassen's study. In our work, we also found examples of Andreassen's second category, where the students and the practicum teacher had an intention of collaboration but failed (exemplified by thesis 5 in our data), and Andreassen's third category, where the students maintained their distance from the practicum teacher in their AR projects (exemplified by theses 2, 6 and 10 in our data). In addition to Andreassen's results, we found a fourth category where the practicum teacher did not engage at all in the AR projects (the three cases from South Africa, theses 7, 8 and 9). This meant that the students carried out their projects with little practical support from their practicum teacher. The partnerships seemed to be undermined by weak communication when the project aims were outlined. In this phase, the students had undergone their first practicum period and were at the university. Arranging dialogues between the practicum teacher and the students could be perceived as too demanding.

In practice, the university teachers' roles and support in the AR projects were invisible in most of the cases. An exception was thesis 2, where the students pinpointed the importance of the university teacher's support and engagement; we found traces of tripartite collaboration as well. The students honoured the practicum teacher's engagement in their work and described how they discussed their ideas with the university teacher during the action planning. They wrote about their cooperation with the university teacher: 'His work on analysing the curriculum has been important to us according to our understanding of educational planning and the meaning of interdisciplinary education'.

How the different actors related to one another to support the students' bachelor's projects varied, seemed to occur occasionally and depended on the context and the actors' personal engagement. Generally, the tripartite collaboration was invisible in the students' theses despite the expectations communicated in the specification texts.

Assessment – a formal process without student involvement

The practicum teachers do not perform any role in the assessment work. Despite the above-mentioned hints in the *Pamphlet*, the roles of the practicum teachers and the university

teachers seem fully separated in the sense that (except for the arranged communication in the dialogue seminar) they cross the boundaries between school and university only to a limited extent.

The research cited in the literature review underlines how assessment in higher education should be understood as a communication process (Higgins, Hartley, and Skelton 2001). The bachelor's project is primarily assessed through written communication. We can discuss communication at two levels – the system's and the actors'. In the *Guidelines*, marking is indeed a focus. In the *Course Plan*, the only information about what the results should be or what should be communicated to the students consists of the grades. In the *Pamphlet*, the annual plan stops with the submission of the assignment and the dissemination of the results at a seminar. Although learning is more effective when students understand the assessment process (Price et al. 2011), the university does not communicate an ambition to include the assessment as part of the learning process. Nothing in the *Guidelines* indicates that planning, acting and assessing in practice should be considered in the examiners' work. What has been carried out in practice does not seem valued in the assessment process. The *Guidelines'* content only notes that the focus is on the formal work with marking rather than the students' learning. The students seem unaware of the *Guidelines'* focus on the assessment of the academic features of the theses (see Figure 1) and less on collaboration and actions in practice. The many complaints indicate that the students do not perceive themselves as actors in the assessment process; they are neither involved nor have insights into it.

Discussion

Our study focused on 10 bachelor's theses, where the students complained about the assessment. We aimed to increase the understanding of the challenges in supporting and assessing AR projects in ITE. Our hypothesis was that the students in the study were dissatisfied with the assessment and the grades they received, in relation to their efforts in practice and their written assignments. In this section, we discuss the challenges in tripartite collaboration and boundary crossing (Edwards 2010), according to the students' work and bachelor's theses, and the issues in the assessment process.

The specification texts are informative, whose aim is that all involved develop a common understanding of the requirements. The texts have been developed over several years, and when one of the specification texts is changed, it has implications for the others. It seems that to a lesser extent, the texts have considered intertextuality (Atkinson and Coffey 2009). When the practicum contexts for action and analyses vary, as they do here, it can be difficult to cover all possible variables. However, the three texts together provide a clear interpretation of how the students, supervised by the practicum teachers in school and by the teachers at the university, should initiate action in practice for quality changes, collect data from the action and write an academic thesis based on their efforts. It is evident that both practicum teachers

and university teachers should be involved in the students' AR projects and ideally, in tripartite collaboration.

Our results show that in five of the 10 theses, the students were unable to fulfil the academic requirements based on AR. These five documents were also characterised by vague aims and research questions. In most of the cases, tripartite collaboration did not develop as presupposed in the specification texts. The bachelor's projects affected the balance of the relations between the school and the university and could be understood as boundary work (Edwards 2010). As Andreassen (2015) and we demonstrated, the practicum teacher and the university teacher seldom involved themselves in the arena opposite to their daily workplace. There is a need to negotiate understandings of the theses, the supervision and the expertise to lay the foundation for communication and offer possibilities of organisational knowledge adoption. The opportunities for learning were insufficiently explored by the participants. For their part, the university teachers and the practicum teachers avoided boundary crossing. The whole project seemed characterised by low expectations for cooperation by the actors, as indicated by the above-mentioned partnership categories (Andreassen 2015).

Based on the Nordic traditions of AR (Rönnerman et al. 2015) and the ideas about learning and boundary crossing (Akkerman and Bakker 2011; Edwards 2010), it is beneficial to highlight tripartite collaboration as a basis for AR to succeed in both practice and the bachelor's thesis. The main aims of the thesis are to improve the students' competence in creating change and development in their own practice in cooperation with colleagues. Additionally, the students' expectations are to develop their academic skills through writing a thesis. In this study, apart from thesis 9, all of the theses demonstrate the students' success in practice in some ways. Based on their actions in practice and analyses, they have developed their own empirical basis for professional development. The fact that the students complain about the assessment can be a result of an empowering practice experience.

In the work with the bachelor's thesis, the practicum teacher and the university teacher represent resources for supporting the students' learning and development. Our results indicate that when only the students cross the boundaries, the capacity of neither the practicum teachers nor the university teachers is sufficiently utilised. The short meetings in the dialogue seminars are inadequate. The actors are included or excluded from interaction in different phases of the process, which can be perceived as strong indicators of what counts as worthy knowledge in the two institutions – the school and the university (Edwards 2010). On one hand, the practicum teacher should regularly contact the university teacher, focusing on the students' practice in order to contribute to the supervision of the theses, primarily in relation to the research question and the assessment process. On the other hand, the university teachers should spend time in school during the practicum period to gain insights into the students' action in practice and thus be able to include this aspect in the assessment process.

These are prerequisites for the tripartite collaboration. The possibilities for learning at the boundaries are not sufficiently utilised. Nonetheless, most of the students have accomplished AR projects of relevance to their pupils' learning and their own professional development.

In the bachelor's theses based on AR, students develop an empirical basis for analysis and knowledge development, which is also fundamental for their professional learning. In line with Toom et al. (2010), we can conclude that students' work relies on a research-based study design and a curriculum that emphasises students' enquiry-based learning. In research-based teacher education, one of the most important roles of supervision is to guide students in the relationship between practice and theory. In an AR assignment that should highlight democratic ideas and communication, we could expect to observe the actors advancing beyond the dichotomy of practice and theory (Rönnerman et al. 2015). Our interpretations of the results indicate that the lack of tripartite collaboration is partly the reason why the relationship between practice and theory is weak in most of the theses. Challenging for both the university teacher and the practicum teacher, it is still a question of whether the study design considers the realities of what it means to break the strong division between school and university in ITE and cross boundaries, as the ideas about the bachelor's thesis based on AR predict.

In our study, we can identify a linear transfer of information, strongly criticised by Craig (1999) and other scholars. The possibilities in open communication about assessment in order to develop the students' knowledge of research and academic assignments are not fully utilised. The assessment process is not in line with AR ideas regarding dialogue and cooperation (Rönnerman et al. 2015). As Higgins, Hartley, and Skelton (2001) point out, feedback needs to be more dialogical and ongoing, that is, more focused on 'feeding forward' in dialogues rather than 'feeding back' through written texts or even just marks or symbols, in which the most extreme case is the bachelor's thesis. Nonetheless, our findings indicate a potential for development regarding the consideration of learning and understanding in the assessment process (Price et al. 2011) of theses based on AR.

Conclusion

The aim of the bachelor's thesis at UiT, as a central part of a research-based ITE, is to lay the foundation for enquiry-based professional practice. The students should acquire a research-based approach to the teachers' work through their own experiences with an AR project in school. Our research demonstrates that core elements of AR, such as dialogue and knowledge sharing (Rönnerman et al. 2015), cease to exist in the assessment process. Grading the thesis from A to F represents a simple form of communication and is not optimal for the students' learning related to their future work on their master's theses or their professional development as teachers. Utilising communication and democratic dialogue and involving the students in

the assessment process create possibilities for further learning and ensure the integrity of the Nordic traditions in AR. In this regard, we also recognise the findings' implications for teacher education, particularly for the use of AR for both students and researchers in ITE. There is a need for further research on the idea about tripartite collaboration and the students' involvement in assessment processes in teacher education.

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