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To cite this article: Marit Ulvik (2014) Student-teachers doing action research in their practicum: why and how?, Educational Action Research, 22:4, 518-533, DOI: [10.1080/09650792.2014.918901](https://doi.org/10.1080/09650792.2014.918901)

To link to this article: <https://doi.org/10.1080/09650792.2014.918901>



Published online: 04 Jun 2014.



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Student-teachers doing action research in their practicum: why and how?

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(Received 3 October 2013; accepted 19 April 2014)

Teaching in today's changing society requires teachers' independent judgement and development. One way of fostering professional development is action research; described, however, as a challenging and time-consuming process. This qualitative study asks whether action research is worthwhile already in pre-service teacher education, or whether the challenges outweigh the gains. Furthermore, it asks how a teacher educator, here the author of the article, could guide student-teachers' action research projects. The main data source is student-teachers' research reports, which are analysed and reflected upon in light of professional development. The study revealed that action research under certain conditions offers a potential for professional development for student-teachers.

Keywords: action research; pre-service teacher education; professional development

1. Introduction

In spring 2011 I became responsible for a module in teacher education based on action research (AR). The module had only been used a couple of times and was not yet an established part of teacher education. This year I was the only teacher for the course. Previously I had some experience with facilitating AR for teachers, and was familiar with the idea behind the approach. I had, however, no experience with AR in initial teacher education and in doing AR myself. A challenge for me became how to facilitate the process for the student-teachers and promote their professional development.

One of the first decisions I made when I took over the module was to undergo an AR project myself, connected to a part of my own teaching I wanted to improve, in order for me to have done what I asked my student-teachers to do. I carried out the project in cooperation with student-teachers in another and more extensive module with which I was familiar and for which I had ideas for improvement. Most importantly, I also had a colleague to cooperate with in this case. What I learned was how hard it is to teach and do research simultaneously, and how I almost automatically prioritised the teaching part. For instance, the interventions became messy because I improvised during my teaching depending on the students' responses. As a consequence, my actions became difficult to evaluate. The following year my research approach can be referred to as AR upon AR (Smith and Sela 2005), or

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first-order and second-order AR: the student-teachers investigate their practice, and the teacher educator investigates her support process (Clarke and Fournillier 2012). The present study was conducted in my second year with AR and investigates this double perspective by analysing and reflecting upon student-teachers' AR reports, which are also their examinations, as well as my experiences with supporting the student-teachers' processes. The two main research questions were:

- How do student-teachers document AR as a means to promote professional development?
- How can I, as a teacher educator, improve the way I facilitate the process?

The study was conducted in a teacher education programme for teachers in secondary school at a university in Norway. The aim of the study was to deepen the understanding of AR in teacher education, and to learn more about what student-teachers achieved from the approach and thereby gain insights into how to facilitate the process.

2. Background

2.1. *The concept*

AR is here understood as interaction between research on one's own practice and the actual practice, a process that has an impact both on the practice and on the theoretical understanding of it. Furthermore, AR is about improving teaching and learning by including a questioning approach (McNiff 2002; Hopkins 2008). It is not just a matter of instrumental behaviour aiming at achieving external goals. Through research, practitioners can imagine and explore how things might be, and research can help emancipate teachers and make them able to avoid becoming vehicles for conventional forms of schooling (Kemmis 2006).

AR is about seeking a voice with which to speak about experiences and learn from them (Winter 1998). AR is about decentralising knowledge production and thinking with others. Importantly, AR is geared towards one's own practice; it is based on systematically gathered information, carried out in dialogue with others, and recognises students as an important source of information (Ponte, Beijard, and Ax 2004). AR goes beyond reflection; it is described as a meta-practice that produces self-knowledge, a knowledge that persons have of themselves or the knowledge a group has of its communal practices (Kemmis 2010).

AR can be part of a process to meet the needs, circumstances and opportunities of new times (Kemmis 2010) in which teachers constantly have to learn to teach in new ways and develop their practice (Hargreaves and Fullan 2000). However, what constitutes a good practice can always be contested (Kemmis 2010), and as a result teaching can be described as an intellectual and practical activity in ongoing need of refinement (Ponte, Beijard, and Ax 2004). In addition, there is a pressure to meet what seem to be requirements from 'above' (Ballet and Kelchtermans 2009) – a pressure that might challenge professional development and make teachers have to balance deciding for themselves and being told what to do (Korthagen 2010; Smith, Hodson, and Brown 2013). Teacher education should therefore empower future teachers, meaning 'to create ways in which people could take more control of their own lives' (Hopkins 2008, 3), and enable them to develop their own work.

Practitioners are seen not only as accredited operatives but as stewards, a role they might fulfil through AR (Kemmis 2010).

2.2. Action research and professional development

In the literature, AR is regarded as a tool in professional development (Winter 1998; McNiff 2002; Ponte, Bejjard, and Ax 2004; Kemmis 2010; Cain 2011). Professional development is a process of continuous learning, and is defined as the total sum of formal and informal learning experiences throughout a teacher's career (Winter 1998; Goh and Loh 2013). Even though there are different views on professional development, most development programmes share the common purpose to change practices as well as beliefs and understanding of practices (Guskey 2002). Development does not happen by itself, but is an inner process that must be needed (Day 2007). One may ask whether it is possible for student-teachers to change a practice they have, thus far, not established. However, even beginning teachers can identify needs and thereby obtain ownership of a development process (Harrison, Dymoke, and Pell 2006). Finding new ways requires time and effort, and can be experienced as threatening (Guskey 2002). Support, coupled with pressure, therefore seems to be essential for continuing educational improvement (Guskey 2002). Harrison, Dymoke, and Pell (2006) claim that there is a fine line between controlling and nurturing.

2.3. Action research in teacher education

In the current teacher education programme, AR was expected to build a basis for further professional development. This assumption was rooted in previous research, which claimed that teachers who are familiar with the approach from teacher education are more likely to use the tool later in their careers (Ponte, Bejjard, and Ax 2004). Furthermore, AR seems to bridge the gap between theory and practice, a common challenge in teacher education (Smith and Sela 2005; Clarke and Fournillier 2012). AR creates opportunities for student-teachers to acquire new skills and new perspectives (Winter 1998; Goh and Loh 2013), and could lead to a more relevant teacher education by addressing student-teachers' experiences (Korthagen 2010). In other words, AR has its benefits.

However, AR also has its costs, and is described as a complex, challenging and time-consuming process that requires guidance (Winter 1998; Kosnik and Beck 2000; Smeets and Ponte 2009). Furthermore, the frameworks in teacher educations are not always ideal (Ponte, Bejjard, and Ax 2004). As a result, AR may lead to frustration. Moreover, AR is described as something you gradually learn and see the purpose of by doing it, and something you start to do when you see the purpose of it (Ponte 2002; Ponte, Bejjard, and Ax 2004). Student-teachers may therefore need a push to get started, and could need emotional support to address the frustration they may feel (Ponte, Bejjard, and Ax 2004). Even if there are good reasons for initiating AR in teacher education, one could ask whether the approach turns out to be counterproductive if the challenges become too dominating.

Teacher education should create learning opportunities, and AR might mean that '[i]nstead of learning from within "the safe waters of the fish bowl", the students are encouraged to test "the uncertain waters of the great sea"' (Goh and Loh 2013, 215) – which could be described as a realistic teaching situation. However, there must be

a balance between safety and challenge so as to avoid the process becoming a matter of survival rather than of learning from experience (Korthagen 2010). To be a fruitful activity, AR should be embedded in a programme that emphasises inquiry into teaching as a continuous part of practice (Dobber et al. 2012). Dobber et al. draw a distinction between inquiry as a ‘stance’ and inquiry as a ‘project’. The former is a position and a way of seeing. A ‘project’ is time bound, and the participants choose quick and *ad hoc* decisions, and do not develop an interest in doing educational research in the future (Dobber et al. 2012). Time constraints in teacher education might lead to the latter position.

Researchers state that educators find student-teachers to be of the mistaken opinion that teaching is a simple activity, that AR is frightening and burdensome, that theory is irrelevant to practice and that research is something academics do (Ponte, Beijard, and Ax 2004). In this situation the educators see their role as a matter of getting students started and giving emotional support (Ponte, Beijard, and Ax 2004). The teacher educator becomes, in a way, the one who knows; the student-teachers do not know and become dependent on the educator. Empowering then seems to be something brought about ‘from the outside’. The facilitators’ dilemma is how to let student-teachers learn to act on their own, but not in such a way that they feel they are being abandoned and alone (Goh and Loh 2013). People cannot experience everything themselves. They also have to draw on other people’s experiences; either through research literature or through such experiences communicated by someone more experienced than themselves. How they want to use what they learn, however, cannot be decided for them.

In doing AR, student-teachers can move from wanting to work on everything at the same time in an *ad hoc* way to concentrating on one aspect of their practice that they can influence (Ponte 2002). Through AR, for instance, student-teachers can learn to choose a problem and solve it in their own way, to make decisions, and to prioritise (Kosnik and Beck 2000). They might achieve a questioning approach to teaching, and learn how to examine a problem and where to look for resources to solve it (Kosnik and Beck 2000).

To sum up: teaching and learning are complex endeavours that can always be improved. AR might change practices, but also the theoretical understanding of such practices, and is a way to empower teachers and help them assume control and find their own answers. It is a meta-practice that produces self-knowledge by systematic investigation of practice in dialogue with others. Implemented in teacher education, this process of professional development involves some challenges for the teacher educator. One challenge is to find a balance between challenges and support; another is to provide an adequate framework and to facilitate student-teachers’ AR projects without taking control.

3. The study

3.1. The context

In Norway there are two different routes to becoming a teacher in secondary school (students 13–19 years old). One is a one-year postgraduate teacher education programme (PGCE). The other, in which this study took place, is a five-year master programme with integrated teacher education. In this programme, student-teachers do their master degrees either in science/mathematics or in languages. In pedagogy (general didactics/educational theory), the students from the different faculties and

departments meet in the department of education, and during the first four years of their master programmes they complete four modules in pedagogy (10 + 5 + 10 + 5 academic credit points). Individual AR projects are connected to the last module in pedagogy and to the students' last practice period, and take place during their eighth term at the university. During the fourth year the student-teachers complete two practice periods (one per term), each consisting of eight weeks. Most student-teachers start practicum in lower secondary school and move to upper secondary for the next period. I became responsible for the two last modules in pedagogy, and in the second round with AR I introduced the concept before AR should happen and encouraged the students to start thinking about the topic they wanted to address the next term. The teaching plan for pedagogy in the current term was tightly linked to AR, as shown in Table 1.

How the course is carried out can be viewed as my invention even if I had to build on the previous plan. Table 1 visualises some of the ideas on which the module is built, by focusing on research and seminar activities connected to theory. AR is described as a never-ending story of planning, acting, observing and reflecting (McNiff 2002). In order to move into a spiral as opposed to a circle in the development process, it is important to get new perspectives from the literature and from dialogues with others. Consequently I emphasised cooperation and that the student-teachers should draw on theory. Theoretical knowledge is useful for enabling people to go beyond their habitual behaviour and taking a critical view of practice in the search for alternatives and new thoughts (Brunstad 2007). In a hectic work situation, teachers often have to choose quick fixes and cannot go into depth in the way they can in a prioritised AR project. There they get an opportunity to step back from their actions to place their data in a wider social context (Winter 1998). What happens in a classroom influences and is influenced by what happens in other classrooms during other lessons (Cain 2011). Teachers therefore have to take into consideration underlying issues and not only specific problems (Winter 1998).

It has been asked whether AR is research or just part of normal teaching practice aiming to do things better (Sigler 2009). To legitimise the research approach, the student-teachers were encouraged to use valid methods in data gathering, and they had to 'publish' the work – here, through an oral presentation in front of me, the educator and their peers, and through written form in a report that was finally

Table 1. Teaching plan.

Week	Topic	Teaching method
2	AR	Lecture
3	Literature seminar, cooperative learning connected to compulsory literature	Seminar
4	Qualitative method	Lecture
5	Research design, workshop to plan the projects	Seminar
6	Quantitative method	Lecture
Practicum 9	Professional development	Lecture
Practicum 17	Presentation of self-selected literature	Seminar
19	Presentation of AR projects	Seminar

handed in as the examination. The student-teachers themselves choose the main parts of their literature connected to the topic they address and the research methods they use. In the first lecture I presented the concept of AR, mainly based on McNiff (2002), which is on the student-teachers' reading list. Some of the basic steps they were supposed to go through were to identify an aspect to investigate, imagine a way forward, try it out, evaluate it, and reflect upon and learn from what happened. AR was moreover presented as a tool in professional development. Following Hopkins (2008), I emphasised that a teacher's main task is to teach, and that teachers' research projects need to be manageable – still based on valid data. Furthermore, I encouraged the student-teachers to follow their own interests and to start with a small-scale study, with something that was important to them and possible to affect. The reports were expected mainly to take the form of a classical research article with an introduction, a theoretical part, an empirical part, and a discussion and conclusion.

It was easier for me as a teacher educator to explain AR this second time, and I also had a lot of examples to draw on, and presented a few very different projects to the students to give them some ideas (with consent from the authors). Here is one example of a project.

Eva wanted to improve her way of doing plenary teaching and asked the following question: 'How can I teach in a way that engages my students and promotes a learning outcome?' The reason for asking this question was based on her first practice period. In her report Eva explained:

I felt that my plenary teaching did not turn out the way I wanted it to be. I was nervous and too dependent on a manuscript. Sometimes I stopped, did not finish sentences and appeared obviously insecure. My mentor agreed with my assessment, and suggested I work on this my next practice period.

To learn more about her problem with teaching, Eva consulted the literature on teaching and discussed the topic with her teacher at the university, her mentor in the new school and her peers. She read about lectures and teacher-centred education, which she problematised in her report. However, in her practicum with 18 year olds it was difficult to avoid any kind of plenary lessons. She understood that in her subject, history, she sometimes had to tell, introduce, explain or elaborate. Sometimes this part of the lesson only lasted for 10 minutes, sometimes for 30 minutes or more. Based on what she learned from literature and dialogues, she decided to try out four different ways of teaching:

- Presenting with PowerPoint with bullet points. The students listen.
- Presenting with pictures. The students listen.
- Presenting without anything visual. The students take notes.
- Presenting in dialogue with students and with active use of summary groups.

The methods were cultivated, and the students were informed about Eva's project. To evaluate it, she chose triangulation. She included three different perspectives – the students, the mentors and her own – and she used different methods: questionnaires to the students with both open-ended and closed questions, and a logbook including her own reflections and feedback from the mentor.

To present the qualitative data she used a matrix and a table that showed how her students ranked the four different ways. Previously she thought that the students

would prefer to be involved and prefer the last form. However, they selected PowerPoint with bullet points as ‘the best way to maximise their learning outcome’. Furthermore, the students either liked or did not like the use of pictures. By introducing the four different teaching methods separately, it was easier to evaluate them. Furthermore, the three different perspectives and the insight from theory made it possible for Eva to problematise the students’ views as well as her own pre-understanding. She also experienced that by focusing on the students’ learning outcomes, her self-focus decreased and she ‘forgot’ to be nervous.

In the future she will vary her methods. Different methods appealed to different students and some methods she thought the students needed to get used to. She also became aware of the connection between teaching methods and assessment.

Eva’s project cannot be characterised as an original contribution to general knowledge about teaching methods. However, through the process Eva learned about herself, and her example can have transfer value (similar to other qualitative studies) for other teachers who can identify with Eva’s situation as an unsecure teacher in front of the class with a wish to improve their own teaching. For Eva, improved teaching meant teaching that both engaged the students and promoted their learning outcome.

This paper is based on an analysis of student-teachers’ AR reports (their examinations), exemplified here by a brief version of Eva’s report.

3.2. *The sample*

Altogether I have facilitated 38 student-teachers’ AR (two cohorts). From this population a strategic sample (different subjects, gender, age, grades, and themes) of 14 AR reports from the last cohort was chosen for a deeper document analysis. The reason behind this choice was pragmatic. I did not have written consent from all of the student-teachers to quote the reports – partly because I asked for it after their examination, not to put pressure on them – and had to relate to a limited selection.

3.3. *Methodology*

To obtain an overview and to prepare the strategic sample I started out by reading and making a preliminary analysis of all the 38 reports from the two cohorts of student-teachers. To illuminate the main research question concerning how the reports document AR as a means to promote professional development, I asked the following sub-questions:

- What themes do they address and why?
- How do they understand AR?
- What are the challenges and possibilities they face?
- What do they state to have learned?
- How can their views be interpreted in light of professional development?

I also reflected upon how I, as an educator, could improve my support. In the reports it became visible how the students had interpreted what they had been taught in the course and how they understood AR. I tried to identify pros and cons of doing AR in teacher education and how I eventually could contribute to strengthening the pros and avoiding the cons.

The 14 reports were then chosen for closer analyses using the following steps:

- (1) Reading to obtain an overview of each report.
- (2) Reading thoroughly, and with the research questions in mind.
- (3) Making a matrix based on the 14 reports and the sub-questions.
- (4) Reading and looking for surprises and elements that did not fit.
- (5) Final reading – looking for quotes.

I also kept a diary in which I wrote down my reflections during the reading, aiming to understand how I could improve my support and, if necessary, change the module.

To validate my project, I had a meta-discussion with the students at the end of every seminar about that seminar and the overall process of AR. In the last seminar the students evaluated the course in a plenary conversation. At the end of the term, they were also invited to answer an online and anonymous evaluation. Every student was entitled to two hours of mentoring from me, an arrangement most of them made use of. The mentoring gave me a deeper understanding of the individual processes. Furthermore, the reports and suggestions for improvement of the module were also discussed with the external examiners. Since the module is part of a wider programme, the results from this project have also been presented for and discussed with my colleagues in teacher education.

The informants received information about the project and gave their informed consent to participate. They were informed that their responses would be handled confidentially. Beforehand the project was also reported to and accepted by the Norwegian Social Science Data Services. The researcher in the project was the only teacher in the specific module, something that could create a tension and a pressure to participate and to live up to expectations. The reports were therefore also compared with the online anonymous evaluations of the module.

The student-teachers were themselves encouraged to take ethical considerations into account in their projects, and to anonymise schools and students. Moreover, it was emphasised that they were supposed to investigate their own practice, not the students in the classroom. Still, their research could include sensitive questions to students, and they had to discuss the questions with their practice teachers.

3.4. Findings

I start by presenting the findings related to the first research question about AR as a tool in professional understanding, then move on to the second research question concerning how I, as an educator, can best facilitate the student-teachers' processes. In this part I present the pros and cons with regard to doing AR in teacher education based on my reflections in connection to the reports as well as my experiences with the module.

The 14 reports analysed in depth address three different themes:

- (1) To improve teaching methods; for example, to optimise plenary teaching, to catch students' attention at the start of a lesson.
- (2) Classroom dialogues; for example, to increase the oral activity in the class.
- (3) To have an impact; for example, to influence students' willingness to ask for help, to influence motivation or learning strategies.

The first theme focuses on themselves as teachers and how they perform in the classroom. The next theme is related to their relationship with the students, and the final theme to the students' outcome. All themes could lead to self-knowledge, depending on how they were handled.

AR is a matter of living up to one's own ideals. An interesting part of the analysis was therefore investigating how the student-teachers justified their themes. Table 2 presents both the different justifications and illustrating quotes from the reports.

Most students had more than one justification for their projects; however, there was a tendency towards researching something outside themselves, and not their own practice. Only a few expressed a need for improvement, like being aware of all students, or connections between their projects and their own values, like building on the assumption that every student has something to offer. McNiff (2002) claims that AR starts with the question: How can I improve my work? However, if the student-teachers understood the concept of AR, it was still hard for them to decide what to improve, to make a plan for an invention, to carry it out and to evaluate it, all during a few weeks.

The main challenges related to doing AR in the practice period were lack of time and experience, and being in an unpredictable situation in another teacher's classroom while simultaneously dealing with multiple roles, including being a student, a teacher and a researcher. The main opportunities were experiencing professional development by getting a new understanding or developing new practices they were not previously aware of, experiencing having an impact in the classroom, and cooperating with others – students, peers and mentors. It appears that AR promotes cooperation and encourages student-teachers to take risks and to discover that what they do in the classroom has an effect, which can offer a valuable experience of mastery.

Some of the student-teachers had only started a development spiral and had so far only changed their understanding. What mattered, as I saw it, was how they reflected upon their processes and what they got out of it, and how they planned to continue later on. The learning outcome is presented in Table 3, illustrated with examples from the reports.

Table 2. Justifications of themes.

Justification	Number (<i>N</i> = 14)	Example
Values	5	'I think every student has something to offer.'
Previous experiences	5	'A lot of students are not motivated to learn foreign languages.'
Professional judgement based on their subject	4	'Oral training is necessary in my subject, English.'
Theory	4	'We know from research that feedback is important.'
Observation of the specific class	3	'Some students do not say anything during plenary sessions in the classroom.'
Need for personal improvement	3	'I tend to talk more often to talkative students.'
None	1	

Table 3. Learning outcome.

Outcome/learned about	Number (N = 14)	Example
The current theme	12	'I have learned that being very clear from the beginning is the best starting point.'
Themselves	6	'It turned out to be easy to categorise students.' 'I have gotten an understanding of what kind of teacher I want to be.'
The theory	4	'The results verified the theory.'
The students	3	'The students' answers and the teacher's observation is not always the same.'
Got a tool in professional development	3	'I have gotten a tool to apply in my struggle to become a better teacher.'
What works and what does not work	1	'It did not work, but I understand the reasons why.'

In the reports all of the students claimed to have learned something – especially about the theme they focused on, although not so much about their own practice connected to the theme. It seemed difficult to grasp AR as a self-study. Some of the student-teachers, however, gained important insights into themselves, such as what kind of teachers they wanted to be and that they cannot always trust their own observations. In the online and anonymous evaluations, 18 of 24 students answered a question with regard to how they viewed the beneficial effects of AR in their development as a teacher. Figure 1 shows the result.

Most student-teachers found the process useful; one-quarter of them did not, however. The student-teachers were also invited to write their comments. Here are three examples of answers:

The course has been very concrete and relevant, but AR has only been obligatory work to complete.

AR is too big of a task to accomplish in a course with 5 ects (academic credit points).

AR seems to be a useful tool for teachers, and it is good to learn about it. However, it is very difficult to do it during a practice period.

As I experienced it, AR seems to offer a potential for professional development, but challenges make it a big task to complete during initial teacher education.

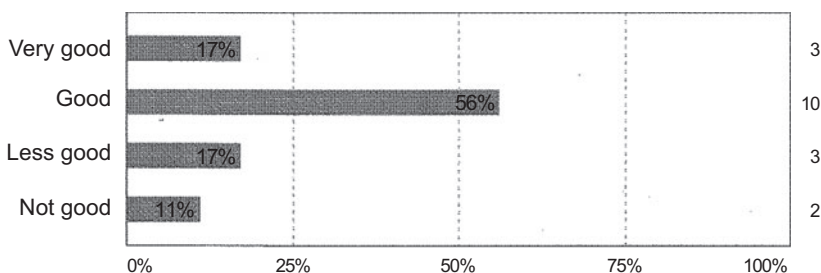


Figure 1. Beneficial effects of AR.

Table 4. Pros and cons with regard to AR.

Pros	Cons
• A relevant tool in professional development • Access to mentoring and cooperation – get started • Interaction between theory and practice • Could offer insight into their practice and themselves • Addressing unique experiences • Trying out in a secure situation – not being responsible • Offers the student-teachers an active role • Easier to do AR later	• Demands too much • Limited time • A compulsory exercise • Lack of support • Lack of cooperation • Another teacher's class • A framework the student-teachers do not control • Simultaneously deal with multiple roles • Involves assessment • Difficult to link to a broader context in a practicum

Is it possible for the teacher educator to promote a more fruitful process? Table 4 presents what I see as pros and cons with regard to doing AR in teacher education.

For some student-teachers, the AR was mainly a positive experience; for others it was more negative. Table 4 shows that I found important arguments on both sides. On the positive side I especially will emphasise the opportunity to connect practice and theory, a challenge in teacher education, to be offered an active role and to experience a tool in further professional development. On the negative side I find problematic the limited time, a framework controlled by the schools and not least the pressure one feels to be in a situation that includes assessment. The question is whether it is possible to cultivate the positive effects. To answer the question this limited study needs to be further developed.

4. Discussion

In this part of the study I will first discuss AR as a tool in professional development, and then go into how I, as a teacher educator, can support the students' processes. Finally I will suggest some possible means to promote successful AR.

4.1. Action research as a tool in professional development

The reports revealed that AR could offer an opportunity for nurturing professional development and contribute to student-teachers' learning as supported in the literature. To fulfil the requirements in the current module the student-teachers had to try out something connected to theory, challenge themselves and move beyond merely following tradition, reflect upon their experiences and discuss them with others. These activities might lead to changes by disturbing previous experiences that can be hard to change (Korthagen 2010). Learning about teaching requires opportunities to take risks and to learn from critical incidents in positive ways (Nilsson 2009), something that might be promoted by AR.

Professional development is here characterised as an inner process that must be needed. From that perspective it seems like a contradiction that AR, which should

promote this kind of development, needs to be pushed. For some student-teachers, the work became most of all something they were obliged to do, what Dobber et al. (2012) call a ‘project’ rather than a position or a ‘stance’, a way of understanding teaching that they will make use of in the future. In order to learn to be independent and autonomous they had to follow through with an activity that someone else had decided would be good for them. Questions could furthermore be raised about how independent student-teachers are in the practicum, where they are going to be assessed. However, to combine pressure and support seems to be essential for continuing educational improvement (Guskey 2002; Hargreaves and Goodson 2006). In teaching there will always be a balance between deciding and being told. One has to consider the voices of everyone involved. Here AR was demanded, but the contents of the projects were up to the student-teachers. They were allowed to be agents, but at the same time were part of a contextual framework they had to consider.

Student-teachers eventually saw a learning outcome in doing AR, and many of them seemed in the end engaged in their projects and did more than they were expected to do. None of them problematised AR as a tool in professional development, but they had objections to doing it as part of teacher education in a small module. They criticised the time constraints, and as novice teachers they found it demanding to have to decide what to develop or improve upon in their teaching. The time constraints furthermore made it difficult to decide whether an innovation was an improvement. Winter (1998) states that time is a friend in AR, and here the student-teachers felt that they did not have time to step back from their actions and bring in a meta-perspective. They found that they had to put too much work into a five-ects module, and recommended organising the teacher education in a way that would provide more space and time; in other words, a more suitable framework. However, if good teaching by its nature is inquiry based (Kosnik and Beck 2000), it is crucial to present this perspective already in teacher education. Future teachers want to learn from the tradition, but this attitude does not have to exclude a critical and inquiry-based approach that is needed to act in specific and new situations.

While AR produces self-knowledge (Kemmis 2010), the student-teachers seemed to aim at a more generic kind of knowledge. They put a lot of energy into collecting data, especially quantitative data. AR is about making teaching the way you want it to be (McNiff 2002), but only a few student-teachers justified their projects with their own values or seemed to be aware of the self-knowledge they developed. In the mentoring conversations, most of them had ideals they could express, and they had actually learned about their own practice, but in their projects they seemed to think their contribution should be knowledge within a field. The expressed outcome of the research was consequently linked to the theme more than to learning about themselves. The projects then easily became an add-on to teaching. Research was a new world for the student-teachers, and they tended to equate research with questionnaires, tables and numbers and to downgrade qualitative studies. Rather few of them used research instruments such as interviews, focus groups or observations, which in many cases would have provided them with more adequate data. However, the research approach could have been introduced more gradually over the course of the programme to make the student-teachers more familiar with different kinds of research and different research instruments before doing their AR projects.

What did the student-teachers achieve from doing AR? In my view they learned to question their own practice and to identify a challenge. They had to connect practice and theory and reflect in depth on their own teaching – something the writing

process supported. They also had to find their own answers and resources to deal with their challenges. However, if they did not have time for elaboration, their research could become superficial and what Dewey called non-educational or even mis-educational (Dewey 1938). In teacher education, with limited time and pressure connected to assessment, there is a danger that AR could end up like this. The question, then, is how support might contribute to avoiding the pitfalls.

4.2. *How to facilitate action research*

One of the questions I asked myself was whether what the students did could be called research. From my point of view, the student-teachers' projects can be understood as research as long as it is a systematic investigation into own practice, is connected to theory and is presented for and exposed to critics. To bridge theory and practice and make interaction possible, both parties need to be present in the process. Doing practitioners research, the student-teachers had an opportunity to speak about their concrete experiences and connect their own practice to theory. During the planning process they often went to the theory to get ideas for actions, or they used theory to understand their findings. By bringing in theory, the students may get new views on practice, but also the view on theory can be changed (Smith and Sela 2005). By focusing only on learning from experience by reflection and calling what the student-teachers do 'action learning' one might miss that opportunity.

Additionally, I see it as important for teachers to have a questioning approach to teaching and to be familiar with educational research. Using research instruments themselves seems to make them more aware of research and become more critical readers. Furthermore, I think it is important for teachers to examine their work systematically and to see themselves as stewards (Kemmis 2010). I see it as a sound approach to search for relevant literature connected to the student-teachers' own practices instead of starting with theory presented to them by others. The research dimension made the projects serious for the student-teachers, and made it easier to focus less on themselves and more on what their practice did to others.

In secondary teacher education in Norway, most educators have research competence, which I from my own experience with AR see as crucial for introducing research methods and guiding students in research projects. In the mentoring sessions, the student-teachers often had an agenda and something they wanted to accomplish as teachers. They needed help with their research most of all: to sharpen and concentrate their research questions, make their research designs manageable and present the data.

In the mentoring sessions, I met many frustrated student-teachers and tried to maintain a balance between challenge and support. They found it difficult to define what to investigate, to understand what AR was about and were stressed because of the time pressure and their multiple roles. Loughran, Mulhall, and Berry (2006) argue that having opportunities to experience a sense of frustration matters for student-teachers if they are to move beyond being comfortable with tips and tricks alone, to see and feel the problem in order to decide to do something about it, which is exactly what AR is about. The frustration during the process can then, up to a certain point, be fruitful.

Even if student-teachers learned from AR, the question is whether it costs too much. I agree with the students that their projects should be linked to a more extensive module and should be more integrated with other modules in teacher education.

There should also be better communication between the school and the university in order for the institutions to pull in the same direction and thereby make it easier for student-teachers to conduct their research projects. Too many students were left on their own carrying out their projects. Processes in the seminars then became crucial in offering new ideas and strengthening the critical approach. To be inside someone else's vocabulary extends a person's thinking (Winter 1998). More could be made of this in the module.

Next time, I will, inspired by McNiff (2002), want the student-teachers to work more with their justification and become more aware of what kind of teachers they want to be. Furthermore, I will emphasise that what is unique in their research is that it is research on their own practice and not a contribution to more generic types of knowledge.

What especially appealed to the student-teachers was to be able to change something and have an impact on a situation – even if it was in small steps – and to focus on actions and not take what happens in the classroom too personally. They got a sense of personal efficacy. A problem with AR in teacher education, in addition to time constraints and lack of experience, is the assessment situation. The students wanted to live up to expectations and tended to ask ‘what do you want me to do?’ instead of ‘what do I want to do as a teacher?’ To avoid the projects just becoming a compulsory task rather than something that can also provide a tool for future professional development it is necessary to combine pressure from the outside with the student-teachers' own needs. As I see it, doing AR in teacher education offers opportunities because the students are able to try out tools in a secure situation where they have access to mentoring more than they will as new teachers. They can be introduced to a tool that is not often used in schools. With AR, the student-teachers develop their own projects to present, they become agents. However, in that case the school-based mentors need to be part of what happens. Today some are, while others are not. In the reports it appears that some mentors are persons with whom the student-teachers can discuss their plans, who help the students evaluate and who become their critical friends; others counteract AR and make it difficult for the student-teachers to accomplish their plans.

From the study some conditions for successful AR became visible for me as a facilitator:

- A theoretical approach needs to be included to make it possible with an interaction between theory and practice (a point not emphasised very much in the literature).
- AR needs to be explained in an understandable way; how AR is presented to the student-teachers seems to affect their understanding of the concept and is crucial for how they grasp the approach. From my experience, educators then need to have research competence and, more specifically, need to have undergone AR themselves.
- There should be a balance between pressure and support to give the student-teachers ownership of their projects.
- AR should be promoted as an approach that improves teaching and learning, and should not appear as an add-on to teaching. Teacher educators should therefore help students develop manageable projects.
- There should be sufficient time for elaboration and reflection. To limit the time pressure is crucial to promote professional development.

- The schools need to be included in the process, and the mentors need to be part of it. Left to themselves, student-teachers could experience AR as complicated and as a disturbing factor in the practicum.
- There should be a joint understanding of AR in the schools and at the institute. The projects often revealed that what happened in the schools and what happened at the university were not coordinated, and that the student-teachers were pulled in different directions.
- Teacher education should create opportunities for cooperation. AR is described as a dialogical process, a perspective that should strengthen the student's ability to think with others.
- To provide necessary time and space, AR should be an integrated part of teacher education as a whole and research should be introduced gradually throughout the programme.

Next term these points (at least the ones I am in a position to affect) will be included in my development spiral. However, new students will always bring new possibilities and new challenges.

5. Conclusion

AR has a potential for promoting professional development, but to introduce the approach in teacher education is not exclusively beneficial. It has its costs due to time constraints, limited experience and control, and a focus on assessment. However, if good teaching is characterised by being inquiry based, this approach should be included already in teacher education – even if it is hard to do. One might raise questions concerning whether the tool should be introduced through full AR, however, or whether other kinds of classroom research could do.

To nurture professional development through AR, certain conditions should be in place, such as a proper framework, necessary resources and adequate support. An aim for AR was to provide the student-teachers with a tool for the future. Successful experiences from teacher education could inspire more teachers to make use of the tool. If the costs outweigh the benefits, however, AR could turn out to be counterproductive and something teachers will avoid in the future.

References

- Ballet, K., and G. Kelchtermans. 2009. "Struggling with Workload: Primary Teachers' Experience of Intensification." *Teaching and Teacher Education* 25 (8): 1150–1157.
- Brunstad, P. O. 2007. "Faglig Klokskap – Mer Enn Kunnskap Og Ferdigheter [Phronesis – More than Knowledge and Skills]." *Pacem* 10 (2): 59–70.
- Cain, T. 2011. "Teachers' Classroom-based Action Research." *International Journal of Research & Method in Education* 34 (1): 3–16.
- Clarke, P. A. J., and J. B. Fournillier. 2012. "Action Research, Pedagogy, and Activity Theory: Tools Facilitating Two Instructors' Interpretations of the Professional Development of Four Pre-Service Teachers." *Teaching and Teacher Education* 28 (5): 649–660.
- Day, C. 2007. "Committed for Life? Variations in Teachers' Work, Lives and Effectiveness." *Journal of Educational Change* 9 (3): 243–260.
- Dewey, J. 1938. *Experience and Education*. New York: Macmillan Publishing Company.
- Dobber, M., S. F. Akkerman, N. Verloop, and J. D. Vermunt. 2012. "Student Teachers' Collaborative Research: Small Scale Research Projects During Teacher Education." *Teaching and Teacher Education* 28 (4): 609–617.

- Goh, L., and K.-C. Loh. 2013. "“Let Them Fish”: Empowering Student-teachers for Professional Development through the Project Approach." *Educational Action Research* 21 (2): 202–217.
- Guskey, T. R. 2002. "Professional Development and Teacher Change." *Teachers and Teaching* 8 (3–4): 381–391.
- Hargreaves, A., and M. Fullan. 2000. "Mentoring in the New Millennium." *Theory into Practice* 39 (1): 50–56.
- Hargreaves, A., and I. Goodson. 2006. "Educational Change over Time? The Sustainability and Nonsustainability of Three Decades of Secondary School Change and Continuity." *Educational Administration Quarterly* 42 (1): 3–41.
- Harrison, J., S. Dymoke, and P. Pell. 2006. "Mentoring Beginning Teachers in Secondary Schools: An Analysis of Practice." *Teaching and Teacher Education* 22 (8): 1055–1067.
- Hopkins, D. 2008. *A Teacher's Guide to Classroom Research*. Maidenhead: Open University Press.
- Kemmis, S. 2006. "Participatory Action Research and the Public Sphere." *Educational Action Research* 14 (4): 459–476.
- Kemmis, S. 2010. "What is to Be Done? The Place of Action Research." *Educational Action Research* 18 (4): 417–427.
- Korthagen, F. J. 2010. "How Teacher Education Can Make a Difference." *Journal of Education for Teaching* 36 (4): 407–423.
- Kosnik, C., and C. Beck. 2000. "The Action Research Process as a Means of Helping Student Teachers Understand and Fulfil the Complex Role of the Teacher." *Educational Action Research* 8 (1): 115–136.
- Loughran, J., P. Mulhall, and A. Berry. 2006. *Understanding and Developing Science Teachers' Pedagogical Content Knowledge*. Rotterdam: Sense Publishers.
- McNiff, J. 2002. "Action Research for Professional Development." Accessed April 21, 2010. <http://www.jeanmcniff.com/booklet1.html>
- Nilsson, P. 2009. "From Lesson Plan to New Comprehension: Exploring Student Teachers' Pedagogical Reasoning in Learning about Teaching." *European Journal of Teacher Education* 32 (3): 239–258.
- Ponte, P. 2002. "How Teachers Become Action Researchers and How Teacher Educators Become Their Facilitators." *Educational Action Research* 10 (3): 399–422.
- Ponte, P., D. Bejjard, and J. Ax. 2004. "Don't Wait Till the Cows Come Home: Action Research and Initial Teacher Education in Three Different Countries." *Teachers and Teaching: Theory and Practice* 10 (6): 591–621.
- Sigler, E. 2009. "Action Research in Public Schools: Is It Research? Should It Be Reviewed?" *Journal of Empirical Research on Human Research Ethics: An International Journal* 4 (2): 17–25.
- Smeets, K., and P. Ponte. 2009. "Action Research and Teacher Leadership." *Professional Development in Education* 35 (2): 175–193.
- Smith, K., E. Hodson, and T. Brown. 2013. "Teacher Educator Changing Perceptions of Theory." *Educational Action Research* 21 (2): 237–252.
- Smith, K., and O. Sela. 2005. "Action Research as a Bridge Between Pre-Service Teacher Education and in-Service Professional Development." *The European Journal of Teacher Education* 28 (3): 293–310.
- Winter, R. 1998. "Finding a Voice – Thinking with Others: A Conception of Action Research." *Educational Action Research* 6 (1): 53–68.