

Multiple voices, multiple realities, what truth? Student teachers' learning to reflect in different paradigms

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This paper reports on a comparison of two research approaches of the study of the reflective practice in two different modes of tele-guidance of the school practicum. The results of two studies were contrasted encouraging the dialogue between researchers coming from different research paradigms. Although the researchers in the two studies shared some perspectives on educational practices and student teachers' reflection, the studies resulted in two different reports on student teachers' reflection. Ontological, epistemological and methodological beliefs in both studies are related to a rationalistic and a naturalistic paradigm informing the two research sites. Researchers' voices in both studies have been interacting, changing and developing but the differences in beliefs between the two sites seem to have contributed to the different analyses and results.

Keywords: *Research paradigm; Reflection; Student teacher; Methodology*

Introduction

Studies starting from different ontological, epistemological and methodological beliefs may lead to different research approaches and outcomes, thus representing different voices and perceptions. These outcomes are created in dialogue between researcher, research context and research audience. This paper reports on two studies carried out from different perspectives but studying the same phenomenon: the use of tele-guidance environments for communication between student teachers and their teacher educators during student teaching. The data come from a broader study on tele-guidance that had been implemented during student teaching practice and evaluated in four European teacher education programmes in the REFLECT-project.¹ In this project, the teacher education programmes of the universities of Barcelona, Exeter, Trondheim and Utrecht were involved and they used various

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forms of tele-guidance. An evaluation of the implementation of these forms of tele-guidance in the four programmes has been presented by Admiraal *et al.* (1999). In the present paper, we will go into the design and analyses of two teacher education programmes from this project—the Norwegian University of Technology and Science in Trondheim (NTNU) and the Institute of Education of Utrecht University (Utrecht, the Netherlands). Although the two universities had a shared framework for reflection, they used a rather different supervision and evaluation approach informed by different research paradigms. We will contrast these approaches and the outcomes to the extreme and we will relate these to the research paradigms that they applied. The main research question is: how can student teachers' reflective practice in two modes of tele-guidance in teacher education be described starting from different research paradigms informing the researchers? By choosing this theme for our paper we pay tribute to Sigrun Gudmundsdottir, with whom we discussed these paradigms at length in the REFLECT-project.

This paper will first present some ideas about reflection, shared at the two research sites, and then describe the two student teaching practice environments. After describing the research methods and some of the results at the two sites (the Trondheim results are taken from Gudmundsdottir & Hoel, 1996) we turn to the discussion of the different research paradigms. We will contrast these with the help of Guba's (1981) landmark distinction between a rationalistic and a naturalistic paradigm, the Utrecht approach being characterized more by the former and the Trondheim approach by the latter.

Learning to reflect

A shared perspective on the learning process of student teachers in both teacher education programmes referred to the idea of the zone of proximal development. In the neo-Vygotskian perspective (van Huizen *et al.*, in press) this zone can be described as an environment presenting and modeling an ideal standard of achievement and providing supporting conditions for a successful approximation of this standard. Ideal forms have to be of such a nature that they may serve learners (and other participants) not only as criteria of competence but also as objects of commitment. In teacher education, these ideal forms may serve to clarify the relationship between values and aims of school education, the professional view of teachers serving these values and aims, their functions and tasks, and the competences that have to be learnt to be effective in the professional role. Tharp and Gallimore (1988)—supported by the later work of Chaiklin and Lave (1996), Cole (1996) and Wenger (1998)—presented a model that suggests that the progression through the zone of proximal development at first goes through two stages and beyond that into another two stages to achieve mastery (see Figure 1). Stage 1 is called 'assistance provided by more capable others'. In the teacher education programmes, the cooperating teachers and the university based teacher educators are the more capable others who observe the student teachers and with whom student teachers discuss their experiences. Assistance is in many cases primarily the immediate feedback on the student's work. At the end of this stage, teaching

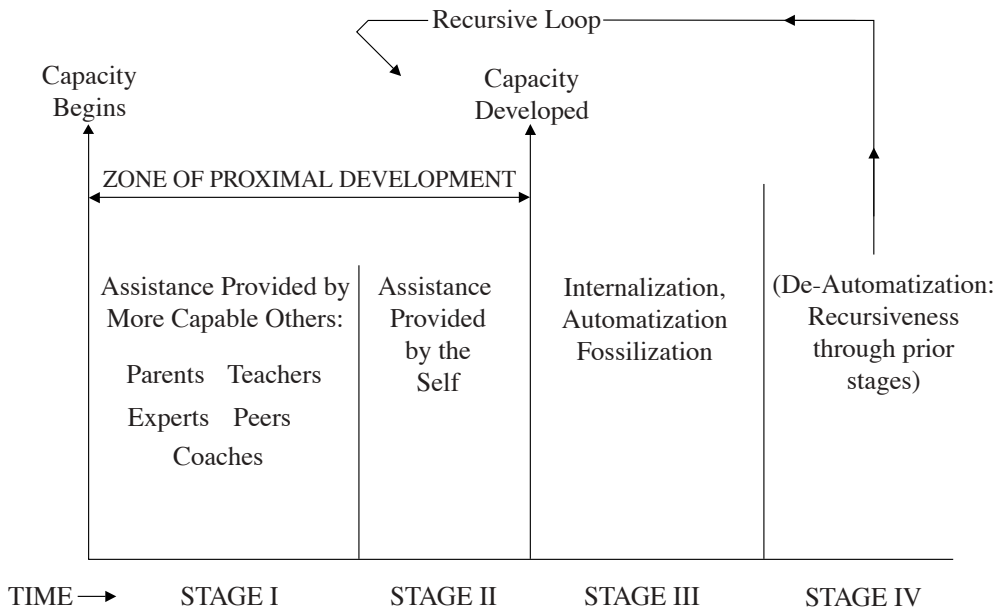


Figure 1. Four stages of assisted performance (Gallimore & Tharp, 1990)

routines become 'internalised, personalized, adapted and owned' (Tharp & Gallimore, 1988, p. 282). Stage 2 comes to the fore when assistance is provided by the self. Here the responsibility for the task has been shifted from the other to the self. Stage 3 starts when the relevant skill is automatic and the novice has progressed out of the zone of proximal development. Stage 4 involves de-automatization of performance and leads back to Stage 2. Events that can trigger de-automatization can be anything from a small change in context to major professional upheavals which de-automatize an important skill. Reflection can be considered as a scaffold that is constructed in the zone of proximal development to make it possible for the student teachers to progress through the last part of Stage 1 and Stage 2 of the Tharp and Gallimore model.

Reflection has been defined in the REFLECT-project as the mental structuring or restructuring of an experience, a problem or existing knowledge or insights (Wubbels & Korthagen, 1990). Korthagen (1985) describes a generic process of reflection in terms of the so-called ALACT model of reflection (see Figure 2). The model of systematic and rational reflection is named after the first letter of its five phases: 'Action', 'Looking back', 'Awareness of essential aspects', 'Creating alternative methods of action' and 'Trial'. The fifth phase is itself the first (action) phase of a subsequent cycle, which means that we are dealing with a spiral model of ongoing professional development.

In general, perspectives on the content, process and purpose of reflection can be scaled on a dimension of practical merits. On the one hand, for example, Zeichner (1983) emphasizes the need for inquiry into the contexts in which teaching takes place, and the ethical, moral and political issues that influence ones' teaching. On the

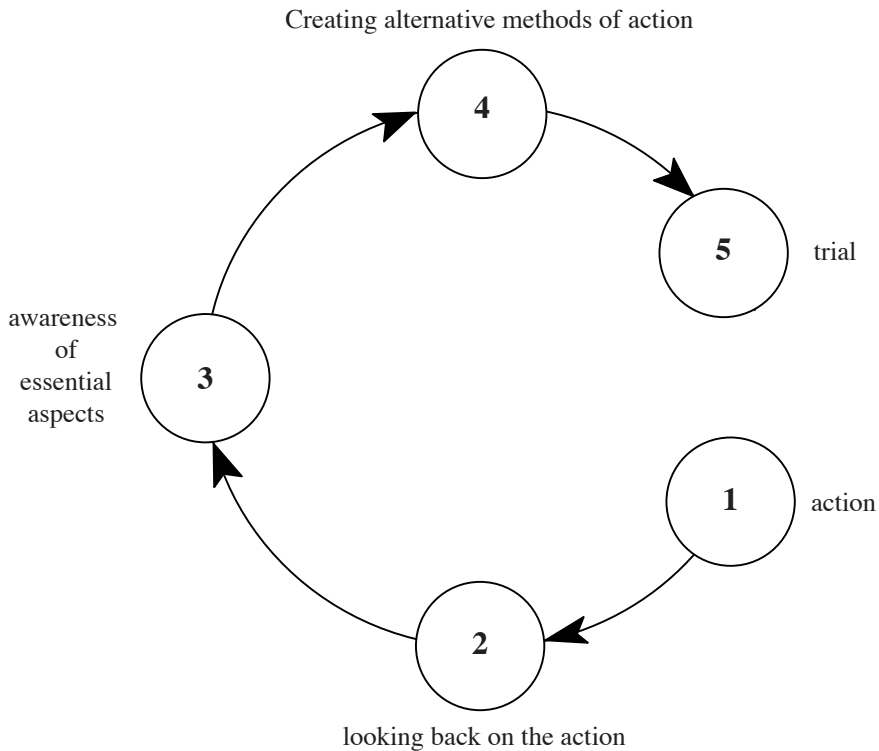


Figure 2. The ALACT-model (Korthagen, 1985)

other hand, some authors describe reflective teaching in terms of structured problem-solving, usually based on problems occurring during classroom teaching (see Copeland *et al.*, 1993; Korthagen & Wubbels, 1995). Some authors cover the complete practical merits dimension by distinguishing a variety of 'levels' of reflection (see Sparks-Langer *et al.*, 1990). In the two teacher education programmes of this study, the practical merits of student teachers' reflection have been interpreted as structured problem-solving. This orientation to reflection and inquiry has been recognized in teacher education:

... emphasizing that professional repertoire and performance are not established once and for all, and are not given from outside a practice, but have to be continually reappraised, reaffirmed or modified, by questioning experiences in the light of standards of evaluation. (Van Huizen *et al.*, in press)

Teaching practice in the two teacher education programmes

In the present study, two different modes of tele-guidance promoting student teachers' reflective practice have been implemented and evaluated: computer conferencing, and one-to-one email conferencing. One-to-one techniques conducted by email applications can be used in supervising student teachers individually to increase the

communication between teacher educator and student teacher. Computer conferencing supports the benefits of the one-to-one, one-to-many techniques, and many-to-many techniques. Earlier, we presented the results of computer conferencing in the supervision of student teachers in more detail (Admiraal *et al.*, 1998).

The student teachers' participation in the tele-guidance projects during their teaching practice was more or less voluntary in both teacher education programmes. The student teachers received information about the projects on which to base their consent to participate. They were instructed in how to use the soft- and hardware and the participants (student teachers and university-based teacher educators) agreed upon the frequency and the quality of their participation. Both tele-guidance projects were technically supported by a help desk at the teacher education institution. In the Trondheim case, student teachers were also instructed in the theoretical framework on reflection used. In the Utrecht programme, these notions on reflection were incorporated from the outset as a conceptual basis for the entire the teacher education curriculum.

Utrecht University teaching practice

The student teaching component of the Utrecht programme was divided in two periods and the study took place in the second part, during a period of three to four months at the end of the teacher education programme. The student teachers taught 10 classes a week in secondary education classrooms. In addition to being responsible for the teaching of students, student teachers were fully responsible for all other teacher tasks such as developing and administering tests, giving marks, compiling student school reports for parents, conducting parents' evenings and participating in staff meetings. In addition to the more traditional face-to-face supervision methods, computer conferencing was introduced with student teachers and teacher educators. During their practice, student teachers were provided at home with a modem, communication software and an electronic mailbox to enable them to send email messages in which they could discuss their field experiences. The participants could send messages to the whole discussion group (all student teachers and one or two teacher educators), as well as to one or more individuals.

NTNU Trondheim teaching practice

The teaching practice component of the Trondheim programme was divided into several periods: observation in a classroom (one week), working in a class on a project (two weeks), teaching at one school (seven weeks) and teaching at another school (two weeks). During the seven-week period student teachers were assigned to a mentor (cooperating teacher) at the school. In addition, a teacher educator from the teacher education department planned a visit. As closer supervision was needed for students while on teaching practice, tele-guidance was introduced. During the teaching practicum, student teachers were provided a user-friendly

portable PowerBook enabling them to communicate by email messages with their teacher educator.

Research methods

In this paper, we will focus on the analyses of the electronic communication (the email messages) of the student teachers and their supervisors. Other data from the studies will not be used.

Utrecht University

During the student teaching practice, 30 student teachers and four supervisors were involved in computer conferencing, including three discussion groups varying in size from four student teachers and one supervisor, to 21 student teachers and two supervisors. All 525 email messages that had been sent to the discussion groups were collected. Some 80% were suitable to be analysed with a focus on student teachers' reflection and on the responses exchanged between the participants. Student teachers' reflection was mapped and categorized based on three successive phases of the ALACT-model (Korthagen, 1985): Phase 2, looking back on the action; Phase 3, awareness of essential aspects; Phase 4, creating alternative methods of action (see Figure 2). The messages were broken down into small units representing only one phase of the model and the student teachers' responses to each other in a phase. We followed an iterative procedure involving constructing an instrument for each phase, fitting the data collected, adapting the instrument, fitting data again until all data could be categorized. The themes of the student teacher email messages have been mapped as well.

NTNU Trondheim

All email messages from four student teachers (two students of Norwegian language and literature and two students of history) and from two teacher educators were collected and analysed. In total, 42 student-teacher messages (26 from students of Norwegian language and 15 from students of history) and 31 teacher educator responses were collected and analysed using a narrative approach (see Gudmundsdottir, 1997, 2002) The email messages were thematically analysed, sometimes in terms of the ALACT phases and sometimes in different ways. Since the student teachers of this study are all unique individuals finding themselves in similar situations, each of the cases had some unique features as well as important similarities.

Student teachers' reflection

To give a sense of the results that were found at the two research sites we present examples from the evaluations: categorizations and related issues in Utrecht and

extracts of the student teachers' writing in Trondheim. For a more comprehensive overview of the results we refer to (Admiraal *et al.* 1999).

Utrecht University

Analyses of student teachers' email messages showed that they almost exclusively wrote about their own experiences in student teaching practice. The email messages merely summarized their daily experiences. Although interrelating themes, causal attributions and analyses of interactions between teacher and students are understood to be essential aspects of the 'Awareness' phase from the ALACT-model, the email messages of these student teachers seldom showed evidence for this kind of reflection. For example, student teachers in their messages hardly ever related the school context, their actions, their own cognitions and feelings, and those of their pupils to each other. The focus on this kind of rational analysis of one's own acts and thoughts in relation to others is a common element in the understanding of the concept of reflection (Korthagen, 1993) and is trained in the teacher education programme. The student teachers mostly wrote about discipline problems and pupil misbehaviour. Themes more distant from their own teaching, for example student learning, general or instructional theories or the broader school context, were seldom described.

The iterative procedure for clustering student teachers' responses to messages from peers resulted in four types of responses:

- Responses expressing empathy and emotional support.
- Responses describing their own teaching experiences.
- Responses consisting of informational support, including tips and suggestions.
- Responses focusing on stimulating student teachers' reflection.

Responses expressing empathy and emotional support were most frequently observed, probably because most messages referred to perceived problems in teaching. Almost every reaction started with an expression of empathy ('Lord, how awful!'), recognition ('I sympathize with you, and I know what you're writing about') or motivation ('keep up the good work'). Some of these responses were at the end of a message, including statements such as 'carry on', 'I wish you good luck' and 'I hope I helped you with this'.

The student teachers often responded by describing similar experiences of their own and with expressions of empathy and support. This kind of responses stimulated other student teachers to put their own stressful experiences into perspective ('I am not the only one with discipline problems') or to try out the problem-solving strategies of others. Furthermore, student teachers could compare these strategies with their own experiences and could get an idea of teaching in other schools.

Responses related to pedagogical content knowledge were less frequent, and primarily consisted of tips about problem-solving strategies that the writer already had tested. Responses with suggestions for the use of theory and literature were not observed at all. Responses focusing on stimulating student teachers' reflection were seldom observed. Student teachers reported that they saw insufficient clues in their

peers' email messages to which they could react in order to help them with their professional development. In one particular discussion group, the computer conferences were structured, including certain agreements about concluding a message: at the end of a message, student teachers had to ask their peers for their opinions, similar experiences or alternatives and other suggestions focusing on a particular situation. Concluding messages with concrete questions for peer students seemed to evoke more reflection stimulating responses on similar issues.

NTNU Trondheim

During the project one of the student teachers explicitly reflected on what writing means as a tool for thinking and learning. The function writing in itself had may best be expressed in the words of this student teacher:

If I hadn't had to write down my thoughts as they occurred I believe that a number of them would be not have emerged. Because actually I'm thinking while I'm writing. (26 April 1996)

When I read through what I have written afterwards, still more thoughts come to mind. (9 April 1996).

The funny thing is that I may have learned equally much from reading reflections afterwards as I did when I wrote them down. Many of the thoughts I had at that time are still developing. (26 April 1996)

Whether the student teacher was writing to a recipient or not seemed irrelevant in this context. What was relevant was the writing in itself as a tool for clarification, insight and comprehension.

Analyses of the four student teacher cases showed that an episode where one had the feeling of not having succeeded or of having come up short, often was necessary in order to dwell on the episode and to use it as a stepping stone for further development. One seldom pauses to reflect on the successes. It was also quite common that when student teachers felt they had failed, the failure tended to take on extra dimensions as they were inclined to search for the causes of their problems and failures in themselves on the personal level.

The next message from one of the History student teachers shows that she had already taken Steps 4 and 5 of the ALACT model, and moved quickly and unaided up the 'spiral staircase', sometimes covering several steps in one go. She could do that because she knew where she was going: She wanted to develop pedagogical strategies that would make silent students feel secure enough to speak out. She responded to a message of one of the two teacher educators:

I am aware of that [boys taking over]. Luckily there are some verbal girls in the class that tip the scales, a little bit. (Step 3)

I have discussed the dilemma with the class and they had different views. Some thought that I should force them to speak out. I rejected that suggestion because it is counter productive. Others thought it was not a dilemma because if one didn't put up one's hand, one didn't know the answer. I rejected this suggestion because there are many students

who just could not be bothered to get involved even though they know the answer. Some like to be asked, even though they do not put up their hand, while others think it is just terrible. (Step 4)

I have used a number of pedagogical strategies to get everyone to say something. The first time was when we were summing up WW1. We had worked with that war for some time and their homework was to review the whole thing. ... I said that I would ask questions the following day. I did, and everyone had to say something that they thought was important in connection with WW1. (Steps 1 & 2)

In that way, everyone got to say something without the pressure of giving a wrong answer. (Step 3)

I have also given them time to sit together in pairs and discuss questions that have no right or wrong answers, and afterwards I ask them questions. (Step 1, 2 & 3)

The fact that 'the silent students' reflection chain was exhausted in a relatively short period and needed a new link, shows that this student teacher was developing professionally at a rapid pace. Reflection initially needs a clear focus that is later broadened to capture a new theme which in turn initially has a clear focus, but is later broadened into an endless succession of focusing on a critical issue of classroom life only to widen out to include other complexities of classrooms and their contexts.

Two sites compared

In both studies, email messages of student teachers have been analysed and described in terms of the ALACT model of Korthagen (1985) which was a core feature of the notions on student teachers' reflection in both teacher education programmes. The way the researchers conducted the analyses and reported the results, however, is quite different. In the case of NTNU Trondheim, parts of the student teachers' email messages have been described in terms of the ALACT steps, and related to earlier assertions of that student teacher, his or her peers and the teacher educator. In this narrative report, the reflection chains are described that present themselves from the email messages. Also the researchers reflected upon their own position both as a teacher educator and as a researcher in this process. In this way, they point to the enrichment of the learning environment that may be a result of the existence of a diversity of different realities or different voices in the student teaching supervision. The student teachers' texts developed in dialogues not only with their other texts, but also with other students and teachers and with their various personally experienced worlds. Each individual text developed in interaction with other students' comments and with other written texts. Although the space in this paper is too limited to show these ideas, in the Trondheim report of the results (Gudmundsdottir & Hoel, 1996), this intertextuality and polyphony or multi-voicedness has been central (see also Hoel, 1997).

The Utrecht researchers took another approach in the use of the ALACT model in the analysis of the email messages. They tried to develop a coding instrument in order to categorize assertions of student teachers in their email messages. In this way they were able to perform quantitative analyses to get an idea of the frequencies of the

occurrence of the ALACT steps in email messages and the various student teachers' responses. Qualitative analyses as well were possible for example to reveal the content present in messages in the various ALACT phases. Whereas the NTNU Trondheim approach seems to emphasize the representation of different voices in the case of the four student teachers studied, the Utrecht approach seems to aim at inferring general conclusions for student teaching supervision in tele-guidance settings. A special feature in the email communication of both studies is that the partners to a high degree share the same context. This makes much of what is written implicit. This feature is reported on in the Trondheim study (Gudmundsdottir & Hoel, 1996):

A characteristic trait of a conversation between two persons who share the same or virtually the same context is precisely the implied parts. Making explicit what the partner already knows would break one of the basic principles of communication, which is judging what must be explicit based on the particular situation. Not surprisingly, when Hanne [one of the student teachers] starts describing her class, her school and her students, she becomes more explicit, precisely because Torlaugh, her pedagogical-content knowledge lecturer, is not a part of that context. ... Such implicit factors are an important part of the data, but they could also be easily overlooked by someone who does not share the same context. (p. 84)

Paradigm differences

We will now interpret and discuss the differences between the approaches and the character of the results at the two sites by analysing the research paradigms that apparently informed the studies. For the sake of clarity we will contrast the two approaches and the outcomes to the extreme, mostly disregarding for the moment the communalities that are also present. A paradigm, or an interpretative framework, is a basic set of beliefs that guides action, containing the researcher's epistemological, ontological and methodological premises (Guba & Lincoln, 2000, p. 19). This view implies that researchers are guided by principles that combine beliefs about ontology ('What kind of being is the human being? What is the nature of reality? What is ultimately real?'), epistemology ('What is the relationships between the inquirer and the known?') and methodology ('How do we know the world, and gain knowledge of it?'). The two studies from the REFLECT-project described above can be captured in differences in these beliefs.

Ontology

Ontological beliefs can be scaled on three dimensions affecting the investigation of what is ultimately real (see Johnson *et al.*, 2004). The most interesting one with respect to differences between the two studies, is the dimension ontological realism, referring to a view that at least some entities are real, and independent of our experience or knowledge of them. The concept of multiple realities is related to this view. Guba (1981) contrasts the naturalistic and rationalistic paradigm in this respect stating that the rationalistic paradigm rests on the assumption that there is a single reality upon which inquiry can converge, and that reality is separable or fragmentable into

independently manipulable parts (which he refers to as variables). The naturalistic paradigm rests on the assumption that there are multiple realities; that inquiry will diverge rather than converge as more and more is known (Guba, 1981, p. 77).

The Trondheim study can be placed on the more naturalistic end of this ontological realism dimension. The inquirers follow the ideas of Bakhtin (1986) and Wertsch (1991), in which the study of mind and language reflects a conception of the world as multidimensional and always at most partially understood. The inquirers accept the coexistence of many voices and a dialogic interaction between them by interpreting the results of the analyses of email messages from a situated perspective in which each student teacher brings her sociocultural background, her values and meanings with her. The inquirers of the Utrecht study can be placed on the more rationalistic end of the dimension. They interpret the email messages more or less out of the context, thus hoping to be able to imply general assertions about student teachers' reflection in tele-guidance settings.

An example of the different ontological beliefs is the conclusion about the ALACT phases that can be recognized in the student teachers' email messages. The Utrecht research group concludes more generally that the student teachers in their programme seldom show 'Awareness' of a situation or event. In contrast, the Trondheim researchers use the ALACT phases as a framework to describe the individual and contextualized voice of a particular student teacher, without the intention of stating general conclusions about the four student teachers involved.

Epistemology

Epistemological beliefs can be scaled on several dimensions of which the dimension of objectivity (vs subjectivity) is an important one for this paper. Objectivity refers to the adoption of a researcher standpoint that is as far as possible value-neutral and free of social, psychological, or theoretical biases. In his contrast of naturalistic and rationalistic inquiry, Guba (1981) summarizes this dimension in his ideas about the nature of the inquirer/object relationship. The rationalistic paradigm rests on the assumption that the inquirer can maintain a detached distance from the objects of the inquiry. The naturalistic paradigm asserts instead that the inquirer and the respondent are interrelated.

In the Trondheim study, both researchers also were the teacher educators who were involved in the tele-guidance of their student teachers. This means that they knew all four students they communicated with before the email correspondence started in a rather personal way. They had been together twice a week for four weeks. They also had informal talks with them about the project. From the first email messages on both student teachers and teacher educators were very open and honest about their feelings, thoughts and experiences. The student teachers' email messages were always analysed in relation to the ones of the teacher educators with whom they were communicating. In their report of the results of the analyses, the inquirers described their own position towards the student teachers, the subject, the topics, and relevant information. In the Trondheim study, the researchers' position can be placed

on the naturalistic end of the objectivity–subjectivity dimension. The Utrecht researchers took another position in their study, which can be placed on the more rationalistic end of this dimension. They considered the relationship between inquirer and respondent as essentially one of independence. They described the themes student teachers reflected upon in their email messages and the way they reflected without relating their interpretations to their position in the study, their ontological and methodological ideas and their conceptual view on reflection.

Methodology

Methodological beliefs refer to the systematic operations that are carried out by the researchers when they conduct research to generate scientific knowledge (Johnson *et al.*, 2004). Two aspects that are important in the conduct of human science are the use of naturalistic methods (or naturalistic observation) and interpretative methods. In his contrast of rationalistic and naturalistic paradigms, Guba (1981), and more recently Sale and Brazil (2004), distinguish various methodological aspects. We agree with them that, although adherence to one or another of these methodological sets of postures is not logically compelled by the underlying axioms, followers of the paradigms seem to be strongly inclined to do so. Rationalistic inquirers prefer, among other things, quantitative methods, a priori theory and the use of analytical instruments, and see rigor as the most important criterion for assessing the quality of an inquiry. Naturalistic inquirers, on the contrary, prefer qualitative methods, prefer to have theory emerge from the data, and see themselves as the instruments to analyse the data. In the Trondheim study, taking a position on the more naturalistic and interpretative end of the methodological dimensions, a narrative method has been used to analyse the student teachers' email messages. The difference with the Utrecht study is not so large as in both the ontological and epistemological aspects: in both studies qualitative methods have been used and an a priori theory has been used in the analysis of the email messages. In addition, both studies used instruments for analysis, although in the Trondheim study the instrument can be more perceived as a framework or profile which has been used to report the results. Moreover, in the Utrecht study a mixed-method design has been used. Recently, the discussion to identify critical appraisal criteria for mixed-method designs heads off the distinction between quantitative and qualitative paradigmatic assumptions (see Sale & Brazil, 2004).

Conclusion

The REFLECT-project was set up and carried out in a period which has been characterized by Guba and Lincoln (2000) as the postmodern (1990–1995) or the post-experimental inquiry (1995–2000). In these periods, researchers moved away from traditional research methods and a concern for storytelling emerged. The Trondheim study most fully represents this shift from a rationalistic paradigm towards a more naturalistic one, but also in the Utrecht study elements from this shift can be observed.

However, in the latter study more often than in the former, the researchers seem to take a position outside the study, giving the impression to consider their interpretation as the true voice of student teachers' reflection in the study. In their more rationalistic approach they aim (which can be questionable) at producing general conclusions about student teachers' reflection in computer conferencing (based on the analysis of the text of the email messages). Notwithstanding that in the more naturalistic Trondheim approach the emphasis is on representing the different voices, in that study also more general results are alluded to.

Both approaches have their strengths and weaknesses. While multi-voicedness seems to be a more proper approach to analyse the reflection chains of student teachers from a theoretical perspective, getting general conclusions about reflection chains may be more helpful for the development of teacher education programmes. Inherent to the naturalistic paradigm is the replacement of the notion of one truth by the notion of multiple voices. No voice represents *the* truth, but every voice represents *a* truth. In fact, the concept of truth as mentioned in the question in the title of this paper has lost its relevance. Voices are created in interaction between communicating persons, in the case of this paper the student teacher, the teacher educator and the researcher. Even as researchers we are part of the story we are telling. Therefore it should become common that the researchers' text shows who they are and that their voice emerges in the text. We agree with Hoel (1997) that:

... the reader is a co-creator of the text, she interprets from her experiences, her purposes for reading the text, her knowledge and association and so on. Hence a text is never the same for different readers. (p. 14)

As we do not know the reader of this text, we by definition cannot know what truth will be represented!

Epilogue

Our discussions with Sigrun Gudmundsdottir in the REFLECT-project were the most evident proof of the concepts of multi-voicedness and multiple realities. Paradoxically, the researchers in the project who abided for the more rationalistic end of the rationalistic-naturalistic dimension did accept the concept of multiple realities, but they nevertheless have chosen to put the researchers' voice in their report on student teacher' reflection. On the other hand, the inquirers at the more naturalistic end of the dimension starting from their view of multiple realities, questioned the reality of rationalistic researchers. In this debate, we will miss Sigrun's voice.

Notes

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