

# CONSTRUCTING TEACHERSHIP BY SUPERVISORY DISCUSSIONS IN BASIC TEACHING PRACTICE

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*The article analyses three supervisory discussions in basic teaching practice of class teacher education. These discussions followed an inquiry-oriented Socratic dialogue genre. The students were helped to reveal the preconceptions they had of teaching and learning, as well as to construct their own theory-in-use. The following features were distinguished in supervisory discussions: conceptual delimitation, thread development, and the signs of construction of a theory-in-use. The sample data derive from an analysis of supervisory discussions between a subject methodologist and student teachers during the evaluation phases of their teaching practice in natural sciences. The theoretical frame of reference for the teaching practice supervisory discussion was socio-cultural learning and the Socratic dialogue – a form that Cheyne and Tarulli (1999) combine with the concept of zone of proximal development. A supervisory discussion carried out within this particular frame of reference is seen to contribute to the development of a self-reflecting teaching profession.*

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## On the nature of supervisory discussions

The goal of the supervisory relationship has been to support the student's growth in becoming a teacher and to develop the student's critical-reflective thinking (Jyrhämä 2000; Kansanen 2003; Soininen, 2004; Väisänen 2003). Teaching practice supervisory discussions have been classified by type, according to specification of phases of the discussion. Classification by type has been made both from the point of view of the operational models of an individual supervisor, and in terms of the supervisor-student interaction. Teaching practice supervisory discussions have rarely been studied from an interactive point of view with an analysis of the qualitative features of the discussion. At its best, the supervisory discussion is a dialogue that strives to generate inquiry-oriented teachership. However, a dialogue is a multimodal form of speech (see e.g. Burbules 1993, 110–131; Sidorkin 1999).

Allan Cheyne and Donato Tarulli (1999) distinguish in the zone of proximal development (ZPD) three different genres of dialogues – Magistral, Socratic and Menippean. The Socratic form of dialogue is seen as a constructor of the zone of proximal development. Vygotsky (1978, 86) defined it originally as an interaction process between an experienced and an inexperienced person that leads from an actual performance level to a potential performance level. With the help of such an interaction process, mental activities that are still developing or can be developed, may be raised to function as a goal of joint reflection. In this process, the support of the supervisor is essential since students can only reach their potential level of development under someone else's guidance.

However, Cheyne and Tarulli (1999) do not define dialogue only as interactive speech but rather as voices that hold sway in societies and rise up from social reality. Bakhtin (1986) calls this reality the third party of the speech, or the third voice<sup>1</sup>. When interpreted this way, it is possible to distinguish three separate voices in a Socratic dialogue: a questioning voice, a responding voice and a third voice. This third voice is not a concrete conversational partner but the indirect presence of a third party. Naturally, the third voice can foster either 'authoritative' or 'internally persuasive' types of discourse. For example in classroom discourse internally persuasive types of discourse is carried out when a holistic text of curriculum is broken down, challenged, retold in one's own words, made one's own, and 'stored away' (Sidorkin 1999, 73). What demonstrates the dialogical structure of the zone of proximal development concept is the fact that there is a need for common presuppositions among interlocutors, like a common subject of phenomenon that binds the interlocutors to each other. Besides the goal of an

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<sup>1</sup> Bakhtin's idea of "a third voice", a so-called hidden third person in the dialogue, is an essential part of the modern interpretation of the concept of zone of proximal development. The voice has usually been seen as the view of the talking subject, a conceptual frame of reference, an intention or a world view. What the content of these third voices is depends on the learning context in question. (Cheyne & Tarulli 1999.)

interactive relationship is the development of certain unanimity on the phenomenon discussed. (Cheyne & Tarulli 1999.)

Magistral and Socratic dialogue genres are common in those situations where an asymmetry of interlocutors is based on an asymmetry of cultural knowledge and power, like in the relationship between a student teacher and a supervisor. Cheyne and Tarulli characterise a Magistral dialogue by a superiority of the *first voice* (authoritative other) over the *second voice*, the teacher over the student, the supervisor over the student teacher. The maintenance of this asymmetry requires a *third voice*, an authoritative and institutional third party upon which the first voice may draw (Bakhtin 1981). Conversely, a Socratic dialogue is open-ended and may be turned at any moment against any participant, including the third voice. Actually the Magistral dialogue becomes transformed into a Socratic dialogue as the *second voice* (e.g. a student) reworks and re-accentuates the words of the *first voice* (questioning other). However, in the Socratic dialogue genre, the student often relies on the views of the more experienced party, modelling and reinterpreting them. (Cheyne & Tarulli 1999.)

What alternative forms can a discussion between a supervisor and a student teacher take in basic teaching practice? Can mutually shared information or knowledge be generated through supervisory discussions? What does the Socratic dialogue look like when the phenomenon discussed is the teaching of natural sciences? This article looks for answers to these questions. Through analysis we wish to show that inquiry-oriented supervisory discussion is an effective tool in constructing of emerging teachership. Before we analyse the supervisory discussions associated with basic teaching practice in class teacher education, we shall describe the socio-cultural learning view associated with the background theory of science education.

## **Social constructivism in teaching of natural sciences**

Constructivism stems from several sources and consists of many different trends. The core idea of constructivist learning is that the students construct the new information themselves based on their previous knowledge and experience. Miettinen (2000) writes that various approaches to constructivism can be analysed on the basis of what they regard as being constructed. Is the object of construction 1) a knowledge structure or a mental concept of an individual, 2) a shared interpretation of a “thing” in a discussion, 3) a rule or an institution that individuals follow, or 4) an artefact or a system of artefacts (a house, a textbook, a microscope, a piece of software or art etc.). The constructivist approaches can be divided into the ‘knowledge-based’ and ‘practice-based’ theories. The cognitive approach deals with the construction of knowledge structures by an individual, while in social

constructionism discourse is a key mechanism of knowledge creation. The connection of discourse to practical activity has been studied by pragmatism and activity theory. These theories underline the connection of meaning making to practical activity (transformative interactions with environment, artefact construction) by seeing the contradictions and problems of practice as a central source of knowing and learning (Miettinen 2000).

Science teaching is tied to practice, interaction with environmental phenomenon. Science changes and lives constantly and new information replaces old information. Textbooks, contents and practices of standard school instruction are essential artefacts mediating various forms of mental and practical activities (Engeström 1990, 21). In getting to know natural phenomena and studying scientific concepts, the role of preconceptions, everyday knowledge and beliefs is of great significance (Engeström 1990; Nevanpää 2004; Ojala 1997). In studying the changes in the scientific thinking of prospective primary school teachers, Ojala (1997) found that most student teachers do not learn a scientific conception of science phenomena during their studies, but rather that they have various unscientific explanations for these phenomena. Relying on unscientific conceptions they cannot interpret textbooks scientifically, but instead their interpretation either supports earlier knowledge or new information is erroneously added to everyday knowledge. More important, the study confirmed that textbook pictures illustrating science phenomena caused different erroneous mental images, which, in turn, lead, to different erroneous conceptions. Thus the goal of teaching is to help students justify and explain the conceptions they have acquired so that they can be made visible and related to present scientific knowledge. (Ojala 1997.)

This study draws upon the notion of socio-cultural learning (Säljö 2000; Tharp & Gallimore 1988; Vygotsky 1978), according to which individual actions take place in social and cultural contexts, typically as part of everyday life and work. Learning is seen as a result of a dynamic interaction between individuals and cultural constructs. In the context of this study it is essential to see how people adopt and learn to use the mediating constructs (like prior knowledge: concepts, theories, human relations etc.) in different socio-cultural practices like, for example, in feedback sessions after student teachers' first practice teaching period. Furthermore, the people engaged in the interaction use these constructs to achieve a particular objective or goal (Vygotsky 1978). In teacher training, supervisory discussions generally aim at the learning of pedagogic and didactic skills, while the immediate targets or topics of discussion do vary during the process. From the viewpoint of socio-cultural learning it is very important that the supervisor and student teachers are focusing on a shared topic with reference to a limited area of subject matter on which they can express their various viewpoints.

## Context of the study

In Finland teacher education is academic and takes place in universities. The class teacher qualification includes a higher academic degree (i.e. Master's degree) with an educational main subject and the studies last five years. The objective is for students to familiarise themselves with holistic human development, teacher/learner interaction, as well as with scientific theories on education, learning and development and their application to practical educational and teaching work. Class teachers teach all or most subjects at the lower level (grades 1–6), guiding the whole personal development of their pupils. Universities have teacher training schools that provide opportunities for teaching practice. Teaching practice is included in pedagogical studies which have a didactic focus and provide specialisation options in teaching in basic education. The duration of pedagogical studies is 1–1.5 years and they consist of theoretical studies and teaching practice periods. Teaching practice takes place during every study year. (Kansanen 2003; Mikkola 2005.)

During the teaching practice periods the interaction between practice and studies of educational theory is emphasised. According to Kansanen (2003) practice teaching begins by visiting practice schools and by becoming familiar with the routines and activities of these institutions. At first the student teachers observe pupils of different ages, their roles as group members, and their ways of interacting in the instruction process in different classes and grades. Next the content of practice teaching is extended to different subject matters, teaching methods, and to all aspects of teaching. (Kansanen 2003.) The plan for practice teaching emphasises the thinking process. Teaching is essentially reflection, and outward dialogue. Theory studies and practice are connected through the thinking process. Reflection is regarded as the core knowledge guaranteeing professional expertise, the knowledge presupposed by the concept of comprehensiveness. Practice teaching is so arranged as to have each theme in turn forming the examination of phenomena, while others are in the role of subsidiary themes, pervading the whole scope of the studies. (Curriculum 2001–2003.)

This study is targeted at the basic teaching practice period of class teacher education. In 2001–2003 basic teaching practice formed part of the “Learning in school education” block of educational studies. In this four-credit block the student teachers’ task was to build for themselves a theoretical basis for looking at the development of the learner and for supervising learning in the school’s operational environment. Didactics lectures (12 h) and demonstrations (12 h), growth and learning lectures (12 h) and demonstrations (12 h) and background literature, as well as school-subject studies, are closely tied in with this entire teaching practice block. The teaching practice (a three-credit block) is carried out in co-operation with the university training school, with subject methodologists and class teachers

endeavouring to establish the above linkages through dialogue and reflection. An university teacher (expert in didactics) accounts for the design of the overall plan as well as for the mastery of teaching subject, where as the supervising teacher of the class concentrates on more practical issues, such as teaching arrangements, familiarisation with students, and guidance in the teaching subject and curriculum. So the university supervisor is responsible for professional development of the student teacher and for presenting alternative ways of acting and thinking.

The aim of both supervisors is to lead students to recognize and construct a theory-in-use<sup>2</sup> of their own and to convert this theory into teaching behaviours. Pitkäniemi and Aaltonen (2002) define theory-in-use as a teacher's personal knowledge and belief system about what is "good" teaching. In contrast, the other promoted form of action, the espoused theory aims to explain or justify a given pattern of activity (Argyris & Schön 1996, 13). This is knowledge that students use to visualise their work as well as to plan and direct their activity during teaching. Espoused theory is moulded out of both personal preconceptions and experiences, and out of the situation and context-bound interpretations that students are part of during their education. In teacher education, espoused theory has been thought to develop into a theory-in-use, when the student's own experiences of teaching and life are revealed, for example in the supervisory discussions associated with teaching practice.

In this case study, we analyse the processes that are used in guiding students as they build their own theory-in-use and relate it to actual teaching behaviour during their basic teaching practice. In 2001, Jorma Ojala worked as the subject methodologist supervising teaching practice for class teachers. He taped six discussions where teaching was planned and feedback was given. Three student teachers doing their teaching practice in the university training school participated in the study. The subject theme of the teaching practice of all the student teachers was environmental sciences and the children taught were about 9–10 years old. The supervisory discourse material is supplemented by the students' training reports and their oral presentations, which were recorded in 2002. Two student teachers who participated in the study were also interviewed at the end of their studies in the spring of 2003.

## **Constructing teachership by supervisory discussions**

At the beginning of teaching practice the conceptions of oneself as a prospective teacher are still embryonic. Therefore, the notion of humanity, the conception of

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<sup>2</sup> According to Chris Argyris and Donald Schön (1996, 13) a 'theory-in-use' is not a 'given' theory. It is the theory of action which is implicit in the performance of that pattern of activity. It must be constructed from observation of the pattern of action in question.

learning and knowledge that underlie the construction of a theory-in-use, are to a great extent defined separately and with the help of ready-made concepts. There is not necessarily any interface between the definitions and teaching behaviour. According to their teaching practice reports, all student teachers proceeded constructivistically in their lesson planning by finding out the preconceptions their pupils had on the countries to be dealt with – Denmark, Russia and Estonia. In their classic book Roland G. Tharp and Ronald Gallimore (1988) mention that the teacher should always find out what the pupils already know and teach them accordingly. Besides a teacher has to introduce the content which is drawn from the children's experiences and try to bind this experience to the text material. Good teaching means establishing relationships between these two things. An example of this kind of activity is the teaching practice report<sup>3</sup> of Student teacher 1:

“Once I got Russia as the theme to be taught I considered various alternative teaching methods. When gathering the contents I realised that we could study Russia through *an investigative approach*. I wanted to try out investigative learning and see how it works in practice. I consciously took the challenge, because after my basic studies in ESS (environmental and science studies) I am convinced of the sensibility of investigative learning. I had no prior experience of this method. I planned the teaching in accordance with a research process, starting with exploration of the pupils' prior knowledge; *what do you know about Russia?* Next the pupils drafted some research questions; *what would you like to know about Russia?* Beforehand I was doubtful and anxious about the sort of questions the pupils would present, but I doubted their skills unnecessarily. I was really positively surprised by their questions. They came to think everything, and even more, that I had thought beforehand myself. After this we evaluated the questions together and *considered what is a good/ bad question like*. Next the pupils figured out *where we could find information on Russia and answers to the questions*. This time, neither, was it necessary for me to tell the answer but the pupils brought out all feasible sources of information. Then the pupils finally got to study the theme, first on the map and then through newspapers. ... Our research process ended with the same question from *which we had started; what do you now know about Russia?* Everyone made *a mind map of their own about Russia*. In the end the pupils still got *an opportunity to evaluate this learning period*.”

The student teacher's account is a description of interactive teaching, where teachership means taking responsibility for the pupils' learning. Matusov and Smith

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<sup>3</sup> Every student teacher writes a short report after his/her teaching practice. The content of the report: the starting points of own teachership, the notion of humanity, the conception of learning and knowledge, the planning process, the goals and the implementation of own teaching, the self-evaluation and the references.

(2005) compared various teachers' ways of talking about pupils in a school-based practicum. They emphasize that teaching cannot be effective if the teacher does not actively seek how the student perceives and understands reality. The researchers gave according to Bakhtin four narrative ways of talking about others: *objectivising*, *subjectivising*, *problematizing* and *finalising*. Based on these narratives were two models of teaching/learning: a) teaching imaginary children and b) community of learners approach to instruction. The first way of talking – teaching imaginary children – was characterised by *objectivising* and *finalising* about children. It seemed to be characterised by unchecked speculations guiding instruction that were not tested by finding out from the children themselves how they understood the instruction and the world. Conversely, the second way of talking – a community of learners approach – gives priority to *subjectivising* and *problematizing* of children. Getting access to the pupil's subjectivity involves two processes for the teacher. Firstly, constantly asking questions about how the children think, understand and perceive reality (*problematizing the children*), and secondly, involving the students themselves in finding the answers to these questions (*subjectivising the children*). (Matusov & Smith 2005.)

Next we will analyse more closely some supervisory discussions with three student teachers after their basic teaching practice. We seek to illustrate the process of Socratic dialogue that leads to choosing a particular concept or phenomenon (construct) as the topic of discussion and target of learning as regards the teaching practice of the student teacher. The point is how this chosen concept helps the student teacher develop his or her own teachership. In the first discussion the common focus of discussion is the theory-in-use being constructed by the student teacher. The second discussion addresses student-pupil interaction, and the final supervisory discussion takes up the concept of differentiation.

In all three evaluation sessions the supervisor starts the discussion with basically the same question: "As you know the aim of this practice has been, in particular, to transfer these educational theories down here to the level of practical teaching work. Now if you think this ESS (environmental and science studies), then to what extent was your planning now guided by theories?" For practical reasons we have condensed these fairly lengthy supervisory discussions here but we hope they still preserve the thread of the discussion.

### **Student teacher 1: Investigative theory-in-use as an object of discussion**

Student teacher 1 defines an investigative learning approach of her theory-in-use during the supervisory discussion (see the previous example). She was convinced of the sensibility of the inquiry-oriented model of investigative learning on the basis of the theories adopted in training. This model of good teaching seems to have become an implicit pattern of her performance. Based on her earlier description,

she seems to use the narrative way of problematising her pupils (see Matusov & Smith 2005) by inquiring first what the pupils already know about Russia and what they would be interested to study about it. She also subjectivises her pupils, when the class, under her guidance, gets an opportunity to reflect on the sensibility of their questions. Further information of the subject is searched together and the learning results are assessed together. The theory-in-use created by the student teacher is characterised by strong confidence in pupils' capability for independent reasoning, which also shows in practice as trust in pupils' capacity to take responsibility for their own learning.

This supervisory discussion starts with the genre of Socratic dialogue. A sense of togetherness is built through the third voice, which is the new conceptual frame of reference of the student teacher, i.e. pupil-oriented teaching as carried out from the perspective of investigative learning. The Socratic questions of the supervisor (the first voice) are inquiry-oriented: So what do you strive for that your teaching would not be? and Well, how do you justify that you try to avoid these? Once the border between known and unknown has been crossed the supervisor poses an open-ended question: What would you do differently? The intention is to examine various alternatives to teach in the framework of practice-oriented learning. The supervisory discussion suddenly gets a new twist, when the student teacher argues for the sensibility of her pedagogical choices. In her practice report she has previously referred to alternative ways for carrying out the teaching task.

**Supervisor:** You said earlier that you'd now do many things differently; such as pruning the topics and the thing that working could have been more extensive for those fewer topics. What else would you do differently?

**Student:** I think I was quite successful in that I accomplished sort of interaction and dialogue with those pupils. So that my contribution, after all, was quite small, on the other hand, in the classroom. ... So in a way what I figured out and what I had never realised before, that the more responsibility you give to the pupils. That the teaching is more pupil-centred, that you just take what will come, and yet you must have quite a lot of that prior work done. But you still have to be flexible in the sense that you wouldn't then turn down those pupils' stuff but genuinely take what is coming from them.

**Supervisor:** I have this recollection that when these preconceptions about Russia were being mapped, there was some pupil saying rather negative things and you didn't react in any way. It is surely somewhat unusual. I believe that on average the teacher would have immediately intervened and started moral frowning upon this.

**Student:** I think I responded with something like we could discuss this more closely later on.

**Supervisor:** One would think that it is terribly essential that if we tell the pupils that please speak out now what you're thinking. And if they then tell what they are thinking, and if the teacher then immediately launches an assault, so to speak, and

tries to reject it. So it won't take long and the kids are no longer telling you what they are thinking.

**Student:** Right, quite right.

**Supervisor:** So, I guess you should indeed accept all those thoughts at this stage. And then only afterwards come back to it and discuss and somehow seek to like rationally consider that is there any sense in this whole business and this whole attitude.

**Student:** Yes, because it does exist. If someone's conceptions are so negative, they won't change just because I turn them down. In fact, it could just make things worse.

**Supervisor:** Quite likely!

In this situation the student teacher cannot find any alternatives for her teaching approach since she feels that she succeeded in accomplishing interaction and dialogue with her pupils. Interestingly the supervisor agrees and offers praise for his student's progress in an interactive conflict situation of her teaching practice. With his last comments the supervisor actually re-accentuates the words of the student teacher (the second voice). The discussion has started with the practice and it has remained in contact with concrete experiences of both interlocutors. The result of this supervisory discussion seems to be full understanding between the supervisor and the student teacher. The striving for consensus has been the central feature of this discussion, because the common object of discussion was the student teacher's pupil-centred theory-in-use (the third voice). It is noteworthy that the third voice, the conceptual frame of reference, was introduced by the student teacher.

## **Student teacher 2: Teacher-learner interaction as an object of discussion**

The student teacher 2 had not constructed his own theory-in-use but he defined his teaching through the features of constructivist learning (children's perspective: interaction with the pupils, pupil's prior knowledge), which can be seen as a given pattern and espoused theory in teacher education. Afterwards, he felt he failed to be in immediate interaction with the pupils and lead the learning activities according to the constructivist principles. During the supervisory discussion he seems to use the narrative way of objectivising his pupils (see Matusov & Smith 2005) although his aim has been to become familiar with them and find their approach to learning (problematizing the pupil). Interestingly, the pupil-centredness, the phenomenon of teacher-learner interaction, was extracted from the teaching practice action of the student teacher as a common focus of discussion

by the supervisor (the first voice). By his question concerning the definition of constructivism (the student teacher's espoused theory) he starts to construct the student teacher's theory-in-use in the zone of proximal development. Following Socratic questions base on the student teacher's answers, like: *What is the significance of the pupil's knowledge?* and *What would you achieve by pruning?* Through these questions the supervisor tries to assist the student teacher to see what the content knowledge of teaching practice has to do with constructivist pedagogical methods. The next question of the supervisor suddenly evokes the reflection of the student teacher (the second voice) and he directs the discussion to an essential social conflict typical of his teaching.

**Supervisor:** How come?

**Student:** Well, the children would have more time to think about these things and their own knowledge what they have. Let's say that it wouldn't be like now, however, that it was a bit like feeding the information. So that there was basically no initiatives coming from the children but mostly from me.

**Supervisor:** Yeah, yes, yes. Anything else besides this pruning and increased pupil-centredness?

**Student:** Personally I'd have room for improvement in that I could be much closer to those children, which I felt that it remained quite distant. So that I didn't have the courage to jump into the teacher's role and go for it with all I've got.

**Supervisor:** You write here that the skiing day was valuable in this respect in particular.

**Student:** Yeah, the communication was there quite natural and the interaction was just sort of easy-going. Then one could perhaps in most earnest get down to the level of children's way of thinking. So that while skiing there I happened to discuss quite a lot everything else with them. They asked a lot of questions. It made the practice of the second week easier.

**Supervisor:** This way of communication is a pretty crucial factor. That people talk differently in different situations. I noticed this exciting phenomenon that I don't know if it's because of that excitement and other stuff. So you talked to a single pupil in the same manner as we use when talking to a group. And for the primary school, you know, the smaller the child, the more important it would be to talk actually to the group in such manner that each child feels that the teacher is talking to me, specifically. Another idea crossing my mind is that if you talk with a wrong style like this, the child doesn't necessarily realise at all that the teacher is talking to me.

**Student:** Yes, it may be that one also needs to talk according to the level, then. ... I mean that I probably talked in the same way to these third-graders as then last year to the fifth-graders.

The discussion is focused on the construction of the emerging teachership when the student teacher questions his way of teaching. He suddenly realises that his teaching has been too behaviouristic. Actually he was too preoccupied with the subject matter and his own competence ... *it was a bit like feeding the information, so that there was basically no initiatives coming from the children but mostly from me.* The supervisor continues the inquiry of this particular pedagogical issue: *Anything else besides this pruning and increased pupil-centredness?* An open-ended question makes the student teacher reflect on and take up a major shortcoming in his everyday teaching practice: *Personally I'd have room for improvement in that I could be much closer to those children, which I felt that it remained quite distant.* The supervisory discussion deals with the zone of proximal development of the student teacher when the supervisor points out a sentence in the student's practice report (an artefact in the discussion) mentioning the meaning of a skiing day in getting to know the pupils. ... *Then one could perhaps in most earnest get down to the level of children's way of thinking.*

The supervisor confirms this indirect third voice of pupil-centred theory-in-use and now he even dares to question the student teacher's behaviour: *I noticed this exciting phenomenon that you talked to a single pupil in the same manner as we use when talking to a group. And for the primary school, ... if you talk with a wrong style like this, the child doesn't necessarily realise at all that the teacher is talking to me.* When some common understanding has been created the supervisor criticises the communicative style of the student teacher in a particular teaching-learning situation: one feature of good teaching is the level of the teacher-learner interaction (the third voice). By confirming the supervisor's statement the student teacher may realise the relationship between his own teaching activity and the pedagogical method of pupil-centredness.

### **Student teacher 3: The concept of differentiation as an object of discussion**

Student teacher 3 had earlier work experience as a class teacher. Based on his earlier observations from the class to be taught, he had considered how to differentiate teaching so that the most talented pupils would not become frustrated and the lower achieving pupils would not drop behind. He consciously applied constructivist learning conception. He wanted to make his lesson plan flexible so that he could proceed according to the demands of the teaching situation. Later, in evaluating his teaching, he realized that at times he had succeeded in reaching the pupil's knowledge level, i.e. previous knowledge, and thereby managed to integrate some larger content areas together (the third voice of constructivism). Unfortunately there was a problem in his class and he isn't sure how to handle it. During the supervisory discussion he temporarily objectivises the children i.e.

'teaching imaginary children' although he wants to reconstruct his theory-in-use – a solution as to how to differentiate his teaching for a lower achieving pupil, particular (problematizing the pupils). According to Matusov and Smith (2005) objectivising means that the student 'doesn't seek intersubjectivity with the pupil who is the subject of the statement about the statement'.

Interestingly the concept of differentiation will be the object of construction during this supervisory session. The student teacher realizes that his developmental challenge is to find out how differentiation can be implemented in practical teaching. He is, however, unsure because he has difficulties in relying on any individual theory since ready-made theories or conceptions are sometimes hard to apply to changing and conflicting teaching practices. He justifies his view from practice with a concrete example of a boy who performed weakest in the tests and whose learning results might improve using behaviouristic learning theory methods.

**Student:** In the class, for example, one boy clearly did worst in the test. I felt that just for this boy perhaps behaviouristic learning would be a better way to learn than constructivism.

**Supervisor:** So why did this boy fail?

**Student:** I'd say he didn't fail in the test but relatively speaking performed better than before Christmas. So that when two-fifths was the pass limit, he didn't make it before Christmas.

**Supervisor:** But if we think that the intention was to learn something, then the results were quite modest after all. What's the reason?

**Student:** Well, probably one factor is that he has a bit of that kind of role in the class, so the others also think that he doesn't learn and they feed the idea that he doesn't learn that fast. So he probably kind of starts to think like that himself. Since he has made some comments like that.

**Supervisor:** Cases like this are always interesting since we should consider precisely what this is all about. Why does this boy act like this? What other reasons are there?

**Student:** In this exam there was like one question. Well it gave sort of poor scores then, 'cause they hadn't really understood the question. ...

**Supervisor:** What was wrong with it? What kind of question was it, what didn't they understand?

**Student:** It was about these winds in Denmark, that what benefits there are? In really many papers they said that it supplies electricity and so on. But it was not understood that - maybe two had got it right then.

**Supervisor:** Well the instruction should have been clearer there.

**Student:** It was, yeah. In that report I was reflecting on my own strengths and weaknesses, so maybe giving task instructions went wrong, 'cause there was a bit of hurry.

**Supervisor:** ... You don't think you had any other thoughts about his poor performance? What could we do to help him?

**Student:** I guess that the teacher should get involved even more. I mean, I think it's clear that the boy's self-esteem is weak. Or he didn't prepare for the exam like the others. He hasn't known better to take the exam seriously enough. And we should probably start by giving him some experiences of succeeding. ...So that he would start to believe in himself and that way relate it with the performances.

**Supervisor:** That's right. This is just how it happens. ... Here you should probably make effective use of this positive feedback. School focuses far too much attention on these negative sides and forgets and doesn't mention if someone behaves well and acts exemplarily. ...

**Student:** True, that would probably be one way. ... In the future I should perhaps try to think a lot more about those alternative ways of carrying out my teaching. This differentiation, now it has clicked with me that I should start taking it totally differently. Because it's a real situation where something really must be done.

During the session the supervisor poses Socratic questions the meaning of which is to expand the student's zone of proximal development: "*So why did the boy fail?*", "*What is the reason?*". At first the student teacher subjectivises the boy by comparing his success with earlier success and according to personal criterion the boy's result was better. But after this he seeks explanations for the boy's poor success by contextualising the differentiation problem (the boy's role in this class). However, the supervisor makes more questions concerning the phenomenon under discussion: *Why does this boy act like this?* and later "*What could we do to help him?*". And finally the student teacher (second voice) starts to reflect his own teaching behaviour as a possible source of the boy's failure.

He compares the boys' success with the success of other pupils. In this session he reveals his uncertainty as a teacher when he mentions that most pupils did not understand part of the exam questions he had designed. By his next utterance (*Well the instruction should have been clearer there.*) the supervisor confirms his self-questioning. This is a critical point in the discussion. The student teacher understands that there might have been some gaps in the boy's prior knowledge, which could undermine his learning motivation. The teacher's instruction should, however, be the primary practice that the teacher is involved. The supervisor reinforces the jointly produced "third voice". The student teacher has to strengthen the boy's self-esteem and learning motivation by differentiating his teaching – even with positive feedback (the third voice of behaviourism). A positive sign of the change is the next statement made by the student teacher. He realizes that assistance to the developing child occurs both in the child's and in the forthcoming teacher's own activity settings. Thus the teacher has to do something in this kind of real conflict situation (cf. Tharp & Gallimore 1993, 130).

## Conclusions

In this article, we have described three supervisory discussions conducted in the spirit of Socratic dialogue. The interactive relationship between the supervisor (expert) and the student teacher (novice) always involves some extent of power use and the Socratic dialogue, in particular, has been seen as an authoritarian form of conversation. However, we suggest that in basic teaching practice of natural sciences Socratic dialogue is a process that expands the learning of an individual student teacher in the zone of his/her proximal development. Especially a novice teacher may find the holistic nature of teaching situations as chaotic – often the intense focus on the matters to be taught and on pulling through the predefined lesson plan distracts the teacher from the main thing; what is the lesson and the matters to be learnt all about as experienced by the pupils (Ojala 2004). The basis of sociocultural supervision thus consists of the many interpretations, experiences, beliefs and misunderstandings of the student teachers that have not yet been proven “right”. To be able to guide others also the teacher needs to become aware of his/her own thinking and behaving patterns and to learn to deconstruct them.

It is important that the supervisor uses his/her expertise to construct a common focus of learning and discussion (phenomenon, concept) that the student finds significant. During the discussion the supervisor moves between the current and the potential level of development by producing conflict and helplessness. The Socratic dialogue often has a specific goal and by his questions the supervisor moves the student teacher towards it. A successful supervisory relationship seems to culminate in the quality of interaction. The interaction of an expert and a novice can be symmetric on certain conditions, when both parties are allowed to say what they think. The supervisor is certainly committed to building shared understanding of theory-in-use of the student teachers by requiring them to explain the motives of their activity. However, in basic teaching practice he supervisor can not leave the student teacher alone to construct the phenomenon and its teaching. It is good to remember that the goal of constructivist supervision is to train teacher-researchers that use different approaches to facilitate learning. Creating a dialogical, negotiating, safe and inquisitive atmosphere also makes room for constructive criticism.

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