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Questioning the Neutrality of Learning Strategies: teachers' and pupils' use of background knowledge

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ABSTRACT – Questioning the Neutrality of Learning Strategies: teachers' and pupils' use of background knowledge. This article investigates educational practices aimed at equitable trainability by looking into an American project on learning strategies that is also being used in Norwegian schools. One special feature of the project is its focus on the pupils' background knowledge. The author examines how background knowledge is interpreted and used in specific classroom contexts. The variation in interpretations from both teachers and pupils demonstrates that it may be hard to channel knowledge and pedagogy in school in specific directions using the learning-strategy project in question. Furthermore, the social background of the student may influence whether *legitimate* background knowledge is activated and used strategically. The author argues that the research on learning strategies can be developed by drawing on perspectives from the sociology of education.
Keywords: **Background Knowledge. Equity. Trainability. Learning Strategies. Basil Bernstein.**

RESUMO – Questionando a Neutralidade das Estratégias de Aprendizagem: uso dos saberes prévios por professores e alunos. Este artigo investiga as práticas educacionais, voltadas à treinabilidade equitativa, ao examinar um projeto norte-americano sobre estratégias de aprendizagem que também está sendo usado em escolas norueguesas. Uma característica especial do projeto é seu foco sobre os saberes prévios dos alunos. A autora examina como os saberes prévios são interpretados e utilizados em contextos específicos de sala de aula. A variação nas interpretações, tanto de professores como de alunos, demonstra que pode ser difícil canalizar o conhecimento e a pedagogia na escola em sentidos específicos ao usar o projeto de estratégia de aprendizagem em questão. Além disso, a origem social do estudante pode influenciar a ativação e o uso estratégico de saberes prévios *legítimos*. A autora defende que a pesquisa sobre estratégias de aprendizagem pode ser desenvolvida aproveitando perspectivas da sociologia da educação.
Palavras-chave: **Saberes Prévios. Equidade. Treinabilidade. Estratégias de Aprendizagem. Basil Bernstein.**

Introduction

Due to the rapid development of knowledge that characterizes the *Knowledge Society* (cf. Dale; Gilje; Lillejord, 2011; European Union, 2006; Djupedal, 2006), knowledge is considered of low endurance. Since knowledge is rapidly evolving/changing, schools must prepare for the pupils to acquire relevant competences for the economy. In such manner the economic discourse on *flexibility* (cf. Chouliaraki; Fairclough, 1999; European Commision, 2008) must be recontextualized into a pedagogic discourse where the pupils acquire qualifications for a flexible *identity*.

In such context pupils are to acquire *key competences* (EU, 2006; Djupedal, 2006). *Competences* are by Bernstein (2000) described as a *generic performance mode* (Bernstein, 2000, p. 53). This recent construction entering general education is typically found outside of schools and is characterised by the following:

> Generic modes are produced by a functional analysis of what is taken to be the underlying features necessary to the performance of a skill, task, practice or even area of work. These underlying apparently necessary features are referred to as ´competences´. ...[T]hese underlying tacit features, identified as ´competences´, appropriate resonances of an opposing model, silence the cultural basis of skills, tasks, practices and areas of work, and give rise to a jejune concept of trainability.

One example of a generic mode entering schools is *Learning strategies*[1]. Learning strategies can be described as specific ways of thinking and acting in relation to school knowledge. They are based on research on the behaviour of good learners, where the assumption is that the behaviour and approaches of good learners can be extracted from the specific content and context and then taught to pupils with *unstrategic* behaviour, thus becoming better pupils (Weinstein; Bråten; Andreassen, 2006). These strategies are thus treated as *neutral knowledge*.

The implementation of learning strategies in education is important to investigate because:

1. Learning strategies are interesting in an international perspective. They are specifically assessed in the OECD's PISA tests, and consequently presented as important knowledge for all countries. Furthermore, the EU defines *learn to learn* as one of eight *key competences* (EU, 2006).

2. Presented as *neutral* knowledge, learning strategies represent a new effort where the aim is to improve equity in education (Djupedal, 2006), and a great deal of economic and human resources are being put into this. However, the neutrality of the strategies in an equity context needs to be critically examined, as both learning strategies as a research

field and equity policies in education (see for example Mortimore et al., 2004; Norwegian Ministry of Education and Research, 2003/2004; Norwegian Ministry of Education and Research, 2006/2007; Teese; Aasen; Field; Pont, 2006) lack an interpretation and understanding of how education is grounded in social relations (see Haugen, 2009; Haugen, 2010a; Haugen, 2010b; Haugen, 2010c; Haugen, 2011). Relating the problem of cultural misrecognition makes research on this issue especially important if, as Young (2008, p. 13) claims, "[...] the expansion of mass-schooling is being paralleled by the dedifferentiation of the curriculum". It may be the case that learning strategies are presented as quick-fix solutions to complex problems related to inequity in education (see also Haugen, 2014a; Haugen, 2014b). As will be demonstrated in this paper, treating learning strategies as neutral knowledge is problematic, and it is possible that the primary effect of this effort is to distract our attention from the real problems related to education and social relations.

Even though the concept of learning strategies has recently been introduced in educational policies in Norway as a consequence of the PISA tests (Norwegian Ministry of Education and Research, 2003/2004), many Norwegian schools have been working with them for a number of years through the project entitled CRISS (Creating Independence through Student-owned Strategies) (Santa, 1993). This project, which originates from the USA, is supported by the National Reading Panel in the USA and has also been implemented in Danish schools. The fact that CRISS has been worked on over time, and not only a local Norwegian project, but also has gained terrain in the USA and other Nordic countries, makes the project interesting at both the national and international level.

The aim of this paper is to investigate the claimed neutrality of the project. Since one of the principles of the CRISS project (will be described in more detail later) is to build on background knowledge, I specifically focus on *how background knowledge plays out in teachers' and students' interpretations*. This focus can reveal how their social position works out in the interpretations.

The structure of the paper will be as follows: first I will present key theoretical frameworks, where I focus on Bernstein's (2000) concept of classification and framing, and recognition and realisation rules. Then the methodology of the paper will be presented, an instrumental case study, followed by the analysis, where pedagogic sequences will be examined and related to power. In the second part of the analysis high and low performances are described and related to the pupils´ social background.

Theoretical Framework: Basil Bernstein's Code Theory

Bernstein's theories demonstrate how power and control are distributed in society from the dominant classes via formal education, in

the way the content is classified and interactions are framed (Bernstein, 1977). Through the classification and framing of knowledge and pedagogy, the cultural basis of the dominant classes is distributed, where the consequence is that pupils from dominant social backgrounds are favoured, while those pupils from underprivileged backgrounds are disfavoured (Bernstein, 1990).

Classification and Recognition Rules

Classification describes power relations and transmission of power. The strength of classification describes the degree of isolation between categories (Bernstein, 2000). In this analysis, special attention will be paid to the classification between pupils' background knowledge and school knowledge, as this is especially interesting in an equity perspective. In the case of a strong classification, the two categories would be isolated and without contact. In the case of weak classification, the two categories would interact and take each other into account.

The classification characteristics of one context constitute the recognition rules through which one context is distinguished from another. In relation to background knowledge, recognition rules refer to whether the pupil can distinguish relevant from irrelevant background knowledge for the specific context.

Framing and Realisation Rules

The concept of framing describes relations of control and is thereby a key element in the study of the relations between, for example, pupil and teacher. Elements related to framing described by Bernstein (2000) are selection, sequencing, pacing and criteria for evaluation and control over the social base. The analysis will pay special attention to *criteria* describing what counts as legitimate use of background knowledge in the concrete contexts. In the case of weak framing, the pupil will apparently have much influence on how to use background knowledge, while in the case of strong framing, the pupil will have little influence on how to use background knowledge.

Whereas the classifications constitute the recognition rules, the framing characteristics constitute the realisation rules of the specific context. In relation to background knowledge, they refer to *how* to perform the relevant background knowledge in the specific context. In other words, whereas the recognition rules describe the differences between contexts, the realisation rules describe specific demands within that context (Bernstein, 2000). Whether the rules are grasped tends to depend on how the pupil's social background relates to the school's social and cultural basis. Consequently, those whose backgrounds are favoured in school will have an advantageous position compared with those whose backgrounds are disfavoured.

Methodology

The methodological approach is an *instrumental* case study (Stake, 1995). Stake differentiates between *intrinsic* and instrumental case studies. In the former, the researcher has a special interest in the case itself, while in the latter, the researcher investigates a case to obtain an understanding of something else, as was the case in this study, where the research on a specific learning strategy project (CRISS) allowed information to be obtained on how the policies on trainability and learning strategies are recontextualised into pedagogic sequences.

The CRISS (CReating Independence through Student-owned Strategies) Project

CRISS is described as an interdisciplinary programme based on principles of cognitive psychology and brain research with the goal of improving the learning of pupils from third to twelfth grade in US schools. CRISS is founded on five principles. Students must be able to 1) integrate newly learned information with background knowledge; 2) become actively involved in their own learning; 3) organise information from their reading; 4) monitor their own learning; and 5) process content material through writing and discussion (Santa, 1993). Through the CRISS project, the teachers and pupils are provided with different strategies, schemes and procedures that should enable them to work according to these principles. In other words, teachers and students are provided with specific materials on how they can build on the five principles described above. However, as will be demonstrated in this paper, interpretations of the same instructions will vary.

Another interesting aim of the project is that, as the author of the project (Carol Santa) claims, CRISS is "[...] designed for all learners" (Santa, 2004, p. 1). CRISS is claimed to be effective in curricula for elementary classrooms and lower and upper secondary schools in mathematics, science, social studies, language, arts, fine arts, technology and physical education classes (Santa, 2004). That is to say, that the strategies provided are culture, age and subject independent. In accordance with Bernstein's ideas described above, the fact that school is an arena where the power relations in society are reproduced to a high degree (Mortimore; Field; Pont, 2004; Norwegian Ministry of Education and Research, 2003/2004; Norwegian Ministry of Education and Research, 2006/2007; Teese; Aasen; Field; Pont, 2006) makes the claim of neutrality in the CRISS project especially interesting.

However, although claiming universality, Santa (2005), states that there is no research investigating CRISS's possible relation to social background. The research on the project is rather aimed at how it may affect achievement on a general level where CRISS is implemented compared to where CRISS is not implemented (Santa, 2004; Santa, n/d).

The research does not focus on individuals, but rather on the class level. Furthermore, as Santa (2004, n/p) states: "These comparisons are often compounded by other factors which make it difficult to tease out pupils' gains in achievement based on Project CRISS from gains derived from other effects". If CRISS is not taking cultural issues into consideration, but claiming universality, there is a danger that pupils' educational failure will be treated as an issue of ability, ignoring how cultural problems exist in education (cf. Hasan, 2005).

To summarise: CRISS as project is interesting because it is gaining terrain internationally, it claims universality without this being investigated and it has been used over a period of time in Norway. As instrumental case study it represents an example on practice of a generic performance mode entering schools both internationally and in Norway where the aim is to construct a *trainable identity*.

Data Material

To minimize misrepresentation, I undertook a *data source triangulation* with the intention of investigating whether the findings I reported changed meaning under different circumstances (cf. Stake, 1995). The analysed data material is based on a qualitative inquiry, where the materials are: *observations* of pedagogical sequences where teachers claim to use the CRISS project, *interviews* with teachers on their classroom practice and collected *pupil work* with CRISS, characterised as high and low achievement[2].

Selection and Procedure

The pedagogical sequences observed were selected according to only *one* specific criterion after ascertaining with the CRISS course instructor: that the teachers and pupils had experience of working with CRISS for more than one year. This was a criterion because even though Santa (1993) claims that CRISS is age and subject independent, and designed for all learners, the teachers and pupils need to have some prior experience of the project. If CRISS is indeed universal, it will not matter where the data material is collected from. The focus of the data material is therefore on *variation* rather than similarities.

The following procedures for data collection were used:

First, observations were carried out in classrooms where CRISS was in focus: all together 35 hours of observation of pupils in second to ninth grades, and working with CRISS in various subjects (mathematics, Norwegian, English, religion and ethics, social science, natural science and situations with no specific subject orientation). The teachers and pupils had from one to four years of practice with CRISS, mostly two to three years. During the observations, I talked with pupils and teachers about the pupils' work.

After the observations, interviews (lasting 1 – 1½ hours) with the involved teachers (14) were conducted, where the specific topic of discussion was the observations rather than teaching and learning in general. I found the specific topic to be quite important, as some of the teachers claimed that the CRISS project improves the learning of low-achieving pupils to a high degree. However, since I had observed specific pupil work beforehand, we could discuss more critically what was taking place in the classroom. Quite often, the so-called *improved learning* rather referred to pupils *doing something* or performing at a low level than qualitatively improving their learning, i.e. the pupil learned either more or better than before. Important elements to be discussed in relation to high- and low-achieving pupils were: What characterises their abilities and disabilities? What learning situations are more difficult/easier for them (with reference both to the specific pedagogical sequence observed and other sequences with different characteristics)? Is there a difference in performance when working with CRISS as opposed to not working with CRISS, and if so: what is the difference? What are the pupils' parental backgrounds in terms of work and education?

Later during the data collection, the involved teachers were asked to collect two performances they considered representative of high achievement and two of low achievement, and to give grounds for their evaluation. This was done to make the teachers more explicit about their evaluation criteria, as some of them had a hard time explaining what they characterised as high or low achievement. This was easier to do when they had a specific reference to discuss. All in all, 18 specific samples of work were collected (small texts, larger projects, mind-maps), where nine were strong (high), nine were weak (low). Many of the teachers did not provide specific samples of work.

Analysis

The *constant comparative method* was used to analyse the data material (Glaser, 1992). Although the grounded theory perspective conflicts with a case-study approach in its relation to theory, I found the constant comparative method to be useful for developing the focus of the study, and for guiding me on when to stop gathering data material. In this method, the researcher tries to develop categories by constantly analysing and comparing the data as the collection process proceeds. In this way, the collected data are gradually more focused and the process stops when new data does not provide new information. In my case, I initially used all classification[3] and framing elements to analyse each pedagogic sequence. As I experienced such thick descriptions to be too complicated to process and compare, I gradually found what I considered to be the most important elements for the focus in this study, namely the *classification between background knowledge and school knowledge,* and the *framing of the evaluation criteria.* Examining

equity, *what* background knowledge is considered legitimate and how it is *evaluated,* is important, especially as CRISS claims to be universal.

I stopped collecting data when new observations did not provide new ways of practising the principles, but all possible combinations according to my analysis tools (combinations of +/-C of school and background knowledge and +/- F of evaluation criteria) were found.

In the following, I will demonstrate different combinations of classification between school and background knowledge (+/- C) and framing of evaluation criteria (+/- F). Pedagogic sequences from the observations will be used to illustrate the analysis.

Background Knowledge in Pedagogic Sequences

Examples of what was characterised as a *strong classification* between background knowledge and school knowledge were an emphasis on facts, grammar, reproduction of defined content, ignoring pupils' questions when they were trying to relate to meaning/own life, rejection of pupils' attempts to problematise the content and a highly academic focus which few of the pupils understood.

Examples of *weak classification* between school and background knowledge were that there was no clearly defined content, the content could be interpreted in different ways, pupils' interests were in focus, they could write about their own experience, use of everyday examples/ tasks were encouraged, use of pupils' names in tasks and focus on current affairs.

Examples of *strong framing* of evaluation criteria were testing/ controlling of how much defined content was memorised, right or wrong answers, clear structure to follow, explicit and clear learning goals.

Examples of *weak framing* of evaluation criteria were unclear criteria for high or low achievement, that pupils could problematise the teachers' categories, unclear evaluation criteria and difficultly measuring what was learned or performed.

As will be described in the following, four combinations of classification between school and background knowledge and framing of evaluation criteria were found.

To illustrate the context more fully, some of the pupils' responses to this teaching will also be included[4].

Group 1: Strong classification between background knowledge and school knowledge (+C), and strong framing of criteria for evaluation (+F)

Four sequences related to this orientation were observed. A sequence:

> A teacher is preparing her eighth grade class for work on Judaism. She claims that she uses the CRISS principles actively, and for this session she wants to use both learning conversation (where the pupils talk to each other for two to three minutes to activate their own background knowledge), and mind maps.
> She starts the session by telling the pupils that they will be learning about Judaism, and she wants them to talk with their partner about what they already know about this topic. After the pupils have talked, she asks them to give two examples each about what they know, and writes the answers on the left side of the blackboard. Afterwards she gives the pupils the option of either making a mind-map or a column note. She asks them to take out their books and look at pages 14-20. She organises a structured mind-map on the blackboard, in which she writes the headings from the chapter on Judaism, with points of importance under the headings. The mind-map is a summary of and visualises how the chapter content is organised. There is no reference to the points expressed from the pupils' background knowledge; they are not taken into the mind-map, nor are they discussed in relation to the chapter they are working on. During the mind-map brainstorming pupils ask: what does it mean to live their life before death, how do they wait for punishment? What does that mean? Why do they fast during Lent; that must be horrible. These questions are ignored by the teacher; she wants them to focus on the book.

Analysing according to classification and framing values we see that when the pupils work with their background knowledge there is potentially a weak classification between the pupils' background knowledge and school knowledge. However, the pupils interpreted the classification as strong, the background knowledge expressed to the teacher was strongly characterised by facts about Judaism. No questions were asked in relation to what Judaism means, what it is really about. The pupils mentioned what they have already learned; for example names of feasts, the star symbol and that men wear hats.

Furthermore, there is a strong classification between this part of the session and when they are brainstorming to make the mind-map. When making a mind-map, the already expressed knowledge about Judaism is no longer discussed or related to the work on the chapter in the book. Thus this part is strongly classified away from the pupils' background knowledge. When questions are raised about the meaning of the content, and when the pupils make efforts to understand and relate the content to their own life, the teacher ignores them and makes them focus on the book. The classification and framing is strong. There is no room for knowledge not related to the book. This element clarified the evaluation criteria: to reproduce the content of the book.

Group 2: Weak classification between school and background knowledge (-C), and strong framing of evaluation criteria (+F)

Six examples of weak classification between school and background knowledge were observed. A sequence:

> A third grade teacher has prepared a session in mathematics where she has designed tasks she found relevant to the pupils' daily life. She has differentiated the tasks into three categories with an increasing degree of difficulty. The tasks are to be solved using a scheme where procedures for solving text tasks are in focus (underline the important factors, the problem to be solved). The pupils are also supposed to draw the tasks, to visualise for themselves how they think. If the task has not been understood, it may be impossible to draw it. I will describe two tasks categorised as low and high degree of difficulty. I observed the children working on these tasks, and talked to them about how they solved the problems.
> 1) All children go to school ten months a year. Per starts one month later than the other children. How many months does Per go to school?
> One pupil was working on task one, but could not understand it and wanted some help. I read him the task, and accentuated the important information: 10 months, one month later, how many months. The pupil still did not understand it. I said: do you know what 10 minus 1 is? Nine, he said. And how many pencils do you have left if you have 10 and give one away? Nine, he said. Then I read him the task once more, and he repeated: I don't understand it.
> 2) Kristian had invited Per, Ole and Pål home to play after school. Per's mother gave them six buns. How many buns did each of them get?

I observed three orientations to this task, using logical reasoning, but arriving at different answers:

One pupil solved the task by giving one bun to each, including himself, and divided the two remaining buns into two parts. He then illustrated this in his drawing. From his reasoning the task looked like this: 6:2 = 1.5. This was the correct answer according to the teacher.

Another pupil interpreted the task like this: 6:3 = 2. He gave his answer to the teacher, and the teacher said: "No, this is not correct; can you explain the way you figured this out?". The pupil answered: "Yes, since I've got 6 buns, Ole, Pål and Per get two each". The teacher replies: "But you need to count yourself in as well. You would like to have some buns too, wouldn't you?". "No, I don't like buns, so I don't want any," was the pupil's honest reply. "Okay," the teacher said, "but in this case I wanted you to count yourself in." The pupil insists: "But I don't want any!".

Another interpretation of the task was that each of the boys got one, and the two buns remaining were not eaten. The pupil did not consider that the buns could be cut into halves, and therefore chose not to eat them, as that would be unfair. In this case the task looked like this: 6:4 = 1. A reasonable, but incorrect answer.

The teacher's aim was to relate the tasks to the pupils' background and real life, and thus she assumed that the tasks would be experienced as meaningful. These are tasks characterised by weak classification as they refer to the pupils' real life. The pupils' names were used to relate the tasks directly to them. In this way she wanted them to become actively involved and experience meaning. The framing can be character-

ised as weak, as the pupils can choose what tasks to solve, i.e. differentiation. But at the same time there is strong framing of the evaluation criteria: the pupil is supposed to learn how to solve problems according to specific procedures. As the pupil has to draw the solution of the task, there is no room for just performing technically (knowledge), the teacher also requires understanding. I therefore claim that this sequence is characterised by strong framing of evaluation criteria.

There is also focus on process, and the nature of the tasks opens for different interpretations and ways to solve the problem, thus weak framing. However, the weak classification and framing values also create difficulties for some pupils and the teacher may have difficulties recognising 6:4 = 1 as a correct answer, even though the reasoning behind it is logical. Connecting work to the pupils' life and background is no easy task (cf. recognition and realisation rules).

Group 3: Strong classification between school and background knowledge (+C) and weak framing of evaluation criteria (-F)

I observed three sequences with strong classification between school and background knowledge and weak framing of evaluation criteria. A sequence:

> A teacher in the sixth grade is preparing the pupils to work on the topic and learn about Australia. She wants to use the CRISS research method: KWL. This method has various steps the pupils are to follow. 1. Activate background knowledge: What do I Know about Australia? 2. Set learning goals: what do I Want to learn, and how am I to learn it? 3: Control own learning: what have I Learned? This involves using a meta-cognitive perspective on own learning and evaluating it.

The teacher has the following to say about her experience of doing this:

> I gave the class this task: now use the KWL method and do a project on Australia. The high-achieving pupils have no problem with this method. They just go ahead and do it.
> The low-achieving pupils have great problems. It starts already when they are to express what they know about Australia. As an example, one of my pupils did not have much to say about that the topic at all. And to set goals for the project! Impossible. He didn't know what to learn, to set realistic goals, or even to express what to search for. So, what I did was I went to the library with him and I found a book about Australia. I showed him what pages to read to find out about: number of inhabitants, capital, rivers, what they produce and so on. I gave him a big, blank sheet of paper, where I wrote the headings in columns: capital, inhabitants… He needs me to follow up very tightly, needs things to be very clear for him about what to learn, and needs help finding the material. The CRISS-project method is way too difficult for him. This class has used CRISS since second grade.

Analysing according to the classification and framing values we see that the classification and framing values vary strongly between the high- and low-achieving pupils in this class. While the high-achieving pupils have more or less a free task, where they themselves apparently can define what and how to learn (weak classification and weak framing) on the topic "Australia", the low-achieving pupils have to be tightly followed up by the teacher, where she defines very clearly for them what and how to learn (strong classification and strong framing). The low-achieving pupils in this case have no influence on what or how to learn, perhaps because they do not grasp the recognition and realisation rules.

Group 4: Weak classification between school and background knowledge (-C)and weak framing of evaluation criteria (-F)

Only one sequence categorised as weak classification between school and background knowledge and weak framing of evaluation criteria was observed: a second grade teacher who carried out a project with her class on the topic "planets". She started the class the same way as the teacher did in the Judaism class (example group 1), asking for the pupils' background knowledge on the topic, but what followed was quite different:

> So, I had no idea what we were going to learn. The pupils knew many things; they had different things they wanted to know. Everybody wrote down two things. We collected them, and talked about them together. Afterwards they could go to the library, talk with parents about what they wanted to learn. It was very demanding, I had to prepare myself for each thing too, so I could talk about it, discuss it the next day. They did not always want to learn what I wanted them to, some of the things I found too difficult, but some understood it, others will later.

This is a very different way of relating to background knowledge. The teacher actually focuses on what the pupils are interested in (even though she did not always agree as to what was the right focus). Opening this widely also requires a weak framing of evaluation criteria. However, in the interview, I asked her what characterised this approach to learning about planets compared to what she had done earlier with other groups of pupils: "Actually, when I opened up and let the pupils decide what to learn, it became more "knowledge-focused". When I decided, the pupils spent more time drawing and painting planets, making physical things".

This is comparable to the Judaism sequence. When the teacher asks for background knowledge, the pupils interpret this as what facts they know. My interpretation of this is that although the teacher opens the knowledge and pedagogy widely, the pupils have a certain understanding of what is legitimate knowledge within a school context (cf. recognition and realisation rules). The framing is not only located within the particular teacher's practice, but within the pupils' understand-

ing of school culture as a whole. What and how you perform is not random. One conclusion to be drawn from this is that although the teacher classifies and frames weakly, the pupils interpret *what* and *how* as being oriented towards facts/knowledge about planets. Consequently, it is not only up to the teacher to decide the values of the classification and framing, but the pupils also contribute to defining the sequence.

High and low performances and social background

In all data material collected (observations, interviews and pupils´ works) I had an interest in comparing high and low performances. In all the five principles of CRISS (cf. description in methodology section) there were many differences in how pupils interpreted and worked with the same learning strategies (see Haugen, 2014b).

When pupils were building on background knowledge it was observed and reported that high performing pupils demonstrated a rich vocabulary, a lot of knowledge to *build on* and relevant experiences from their life outside of school. They could question the content and bring own material to elaborate the given content, as for example make instantiations of principles to own world.

Low performing pupils were described to lack relevant knowledge and a *poorer* language. Additionally it was reported that, even though low performing pupils had relevant knowledge to build on, the often did it the wrong way. Either through associating too freely or not focusing on the essence of the content. Some teachers said that if they emphasised background knowledge they often ended up with some of the pupils focusing totally different stuff than they wanted them to focus on.

For example, a third grade teacher tells this:

> If I ask the pupils to talk about what they know about trout, some of them can get really lost. Like, "you know, me and my grandfather went fishing one time. And you know, we caught five fish. My grandfather brought hot chocolate, and we walked a really long way, etc, etc..".

Furthermore it was easier to work with concretes than abstracts, or that they were dependent on familiar theme/context to understand principles (see for example the first mathematics task in group 2) or to use a learning strategy (for example mind-map, structure note) in a new context.

In the interviews the teachers emphasised that there was a strong relationship between those pupils identified as high versus low achievers and their parents' educational level. High-achieving pupils tended to have parents with high educational levels (those reported have the highest level: for example researchers, architect, dean of a college). The opposite was found for low-achieving pupils (no higher education or professions requiring no higher education). Only one exception

was mentioned in my material: In this case a boy whose parents had a high level of education but whom the teacher identified as dyslexic and therefore a low achiever.

When investigating how teachers reported the observed upbringing of pupils in relation to school achievement, there was a clear connection between what they referred to as a supportive school upbringing and the educational level of the parents[5]. The high-achieving pupils experienced an upbringing which could be described as preparing them for and supporting them in school – through having academic ambitions for the child, facility with academic Norwegian and knowledge that connected with school culture, books and computers available, and by showing interest and motivating the child for school work. Related to the low-achieving pupils, only one home was reported by the teachers to have good support from parents; the highly educated parents of the boy with dyslexia. In these terms, he is an atypical example of a low achiever.

Low-achieving pupils were reported to come from an unsupportive school upbringing. Their parents tended to demonstrate a negative relationship with school, having few resources in terms of school knowledge, language, books or computers. Furthermore, according to the teachers, the parents tended not to motivate their children, nor demonstrate academic ambitions or interest in the pupil's schoolwork. And often they did not attend school meetings.

To summarize: The teachers reported that those selected as high achieving, and thereby pupils working strategically with the CRISS strategies/principles, tended to come from highly educated, school-supportive, often harmonious homes, whereas those pupils selected as low achievers, and thereby unstrategic when working with CRISS, tended to come from low educated, often non school-supportive, sometimes turbulent homes. Some of this can be supported by other research, for example the relation between the educational level of parents and achievements at school (cf. introduction). However, this determining whether or not the parents are school supportive, and whether or not the homes are harmonious, may be reflections of assumptions about the characteristics of the different classes (cf. Berkowitz, 1986). In other words, the assumptions about the level of support of the parents and whether or not homes are harmonious may be the result of teachers' biases and beliefs about these families, rather than any anchoring in hard evidence on the actual home situations.

Discussion and Conclusion

Research on learning strategies is an expansive field. Nonetheless, the effects of directly teaching learning strategies to pupils are not convincing (Bråten; Olaussen, 1999). This study, framed in research on school as an agent in the reproduction of social inequalities, demon-

strates that the intentions to create *neutral* curricula such as CRISS that work for children of *all* social backgrounds do not necessarily function as planned or desired. As demonstrated both teachers and pupils interpret the same principle quite differently.

The various cultural forms used in society and school are described as *codes*. Performing well in school depends on having insight into these codes:

> [...] if code selects and integrates relevant meanings, then code presupposes a concept of irrelevant and illegitimate meanings; [...] if code selects forms of realisation, then code presupposes a concept of inappropriate or illegitimate forms of realisation; [...] if code regulates evoking contexts then again this implies a concept of inappropriate, illegitimate contexts (Bernstein, 1990, p. 14).

The interpretations of building on background knowledge are therefore not neutral in a school context. The differences or changes in classification and framing values will generate different modalities of elaborated codes (Bernstein, 2001 – different codes of the middle classes). In this context, Bernstein describes two kinds of knowledge through the concepts *collection code* and *integration code*. A collection code typically focuses on a reproduction of content, evaluating the *state of knowledge*, as in the Judaism lesson, or the low-achieving pupils in the Australia lesson, while the integration code emphasises that the pupils should have insight into principles and processes rather than facts, focusing on *ways of knowing*, as in the mathematics lesson, or the high-achieving pupils in the Australia lesson.

Furthermore, Bernstein differentiates between two kinds of pedagogic orientations: *visible* and *invisible pedagogy*. With visible pedagogy, the aim is to transfer specific knowledge, and thus there are clear criteria for evaluation of the results. The evaluation emphasises the result rather than the process of learning (Bernstein, 1977), as in the Judaism lesson or the focus on procedure in the mathematics lesson. While in an invisible pedagogy the process is focused, as the teacher arranges the context for the pupil to explore, there is less emphasis on the transmission of specific skills, and consequently the criteria for evaluation are multiple and diffuse, and not so easily measured (Bernstein, 1977). This is found, for example, in the Australia and planets lessons.

The different interpretations referred to are described as an ideological conflict between the *old middle class* and the *new middle class* (Bernstein, 1977), where the old likely relates to a collection code and visible pedagogy, and the new likely relates to an integration code and an invisible pedagogy. In other words, the different sequences of the principle building on the pupils' background knowledge may relate differently to ideologies. Through this, pupils who do not have access to the recognition and realisation rules of the specific context will still

have problems when background knowledge is emphasised. When an integration code and invisible pedagogic interpretation are used, we see that problems arise when "I don't like buns" or "we won't eat the remaining two, as that would be unfair" are integrated in the mathematics problem, or that pupils lack relevant background knowledge, or have not grasped the structure and characteristics of the knowledge to be produced, as in the Australia lesson. Thus, relating to the pupils' background knowledge and becoming actively involved in one's own learning may not always be a good or possible way of learning in a school context (cf. also Samuelstuen, 2005).

The explanation as to why the teaching of these strategies tends to be so difficult, and why success with these strategies (at least in the case here) seems to be dependent on social background may be that learning strategies cannot be separated from the specific school content and context to make meaning for the pupils. Again, this can be explained through the Bernsteinian concepts of recognition and realization rules. For example, in applying the *elaboration* strategy, it is very important *what* prior background knowledge you activate; you have to activate the *right* knowledge (Samuelstuen, 2005; Cooper; Dunne, 2000; Bråten; Olaussen, 1999; Chouliaraki, 1998). The same is true when organizing content or monitoring own learning: you must have insight into the criteria for evaluation of the specific context and content. The strategies must work according to the recognition and realization rules forming these, otherwise you will not be strategic.

How social background relates to the school's code and recognition and realization rules may be described by the different social classes' *orientation to meaning*. According to Hasan (2005) working- and middle-class children tend to differ as to whether they use context-dependent or independent principles. An important hypothesis derived from the material in this study is that as the generic mode treats knowledge as *independent* of context, it may be difficult to appropriate this for lower working-class children, since they are often found to be more successful when using their own strategies *dependent* upon a specific context. The opposite may be true for middle-class children, as they tend to use strategies which are relatively *independent* of a specific context, and thus may relate more easily to this kind of knowledge. As demonstrated in this research, extracting principles and structure, and differentiating between context dependence/independence was difficult for low-performing pupils, as were the problem-solving methods.

It may be possible to explain why a weakened classification in school knowledge might cause difficulties for low-achieving pupils (see also Bernstein, 1977; Cooper; Dunne, 2000; Haugen, 2002; Haugen, 2009) by looking at the different structuring of school and everyday knowledge. Through the concepts of *vertical* and *horizontal knowledge structures*, Bernstein (2000) demonstrates the different characteristics of school knowledge and everyday knowledge, and consequently the

difficulties that may arise when an attempt is made to integrate them. This may be one of the reasons why teachers often choose not to focus on background knowledge when working with pupils from lower socio-economic backgrounds (cf. Anyon, 1981; Anyon, 1988; Bartolome, 1994). In other words, although the teachers try hard, they may experience the bridge between pupils' background knowledge and school knowledge very hard to build (cf. Hasan, 2005).

Hence, as learning strategies are now highlighted internationally, many pupils will be exposed to and required to use a more complicated language about learning in school that they may not have access to due to their different orientations to meaning. When learning strategies are treated as content and context-independent knowledge, that is to say, as knowledge *per se*, it creates problems for both pupils and teachers because they cannot teach the relevance of this without relating to a specific meaning, realization and context. In other words, the problem in focusing on learning strategies as the CRISS project does, is that it fails to recognize the complexities inherent in teaching and learning due to the cultural orientation of school. Such a project thus tries to operate within a limited understanding of how learning occurs. Instead of relating to the diversity in the pupils' voices, the project insists on treating all students in the same way.

However, based on the findings from this study, I argue that by employing perspectives from research in the sociology of education on learning strategies, a wider understanding of this field can be developed. A further question is, therefore, if and how a focus on learning strategies *could* be fruitful for low achievers. In relation to this, I argue that pupil failure in school has to be analysed and reflected on through a broader and more critical perspective, where these complex issues are not reduced to technicalities (see also Siegel; Fernandez, 2000; Bernstein, 2000; Ares, 2007) as is done in the CRISS project. The problem in Santa's work is, in other words, related to the neglect of the social construction of school, where power relations and ideologies provide the signifiers for defining how the meanings of building on background knowledge are to be comprehended. Reducing problems related to learning in school to a lack of learning strategies means, consequently, that the analysis is too limited, and the question is whether such focus first of all serves to distract our attention away from the inequities in school caused by cultural misrecognition (cf. Bartolome, 1994; Siegel; Fernandez, 2000). For further work on the school's role in improving equity, specific and explicit attention must be focused on the origin of the inequities. The question: *What would it mean to open up schools for voices traditionally not heard there* would have to be discussed in a more critical relation to meaning, forms of realization and context (cf. Bernstein above). Studying the relationship between the school's orientation to meaning and the pupil's orientation to meaning is crucial if we are to ensure equity[6].

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Notes

1 For elaboration on what characterises learning strategies and how they can be described as "new" knowledge in school, see Haugen (2009).

2 Before collecting data from teachers and the classroom I needed to know more about the project, how it was taught and how the teachers and pupils worked on it. Therefore, I participated at the courses where CRISS was taught to teachers, studied the CRISS material handed out to teachers and students, and participated in meetings with the group working to implement CRISS in schools. I also interviewed the head of the course. During the process I also presented data material and my hypothesis and analysis of the data to the group of teachers working on implementing CRISS so they could give me feedback on my interpretations. However, due to limitations of space, this material will not be presented in this context.

3 For elaboration on classification, see Bernstein (1990).

4 Due to limitations of space, a further investigation and analysis of various pupils' responses to the numerous pedagogic and knowledge interpretations described is problematised and discussed more deeply in another article (see Haugen, 2014b).

5 However, it has not been investigated as to how teachers' expectations of students based on social background may act as a "self-fulfilling prophesy". It should also be mentioned that when teachers selected two high and two low performers, these most likely represent the "top" and "bottom". The students in the middle are not represented here.

6 An earlier abbreviated analysis of the data material was presented in Hovdenak; Riksaasen; Wiese (2007).

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