This article reports from a research project which explores how conscious efforts of teachers to scaffold and develop pupils' linguistic repertoire create changes in the way the children talk and think together when discussing texts in group. Data was collected over the course of one year through video recordings, teacher logbooks and notes in a third grade school class. Four children's dialogues were examined. The results indicate that 1) the children's participation in group discussions increased, 2) they expanded their discourse strategies and 3) disagreement and tension in the discussions seemed to trigger more and richer discourse. How these results affected the children's learning and identity development is discussed. The article closes by some expanding reflections on the theoretical framework used in the study.

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Text, talk and thinking together

Using action research to improve third grade children's talking, reading and identity construction

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Research themes

There is a great need for more knowledge on the relationships between the linguistic and conversational activities of pupils and their academic and personal growth processes. This kind of insight is particularly important when we bear in mind that exploratory activities are an important way of working in schools today. Looking for new insight, children will always enter into various types of dialogic interaction. For children, *play* is an important element here, as is also *talk* – and *thinking together* (cf. Mercer, 2000). Most curricula in Western countries emphasize that schools should offer environments where all pupils face challenges that are adapted to their aptitudes and backgrounds, that they enjoy going to school, are academically stimulated, and feel appreciated and socially included. The aim of our research is to find out whether and to what extent language may function as a tool for attaining these objectives. In this study we use examples from a Norwegian classroom.[1]

Theoretical foundation
Learning

Socio-cultural theory understands learning as a set of social, cultural processes (Vygotsky, 1978; Wells & Claxton, 2002). The understanding of what such learning comprises can be organized into six main areas (Dysthe, 2001, p. 43). (i) Learning is situated, (ii) learning is fundamentally social, (iii) learning is distributed, (iv) learning is mediated, (v) language is central in learning processes, and (vi) learning is participation in practice communities.

Bruner (1986) emphasizes the importance of the adult, or the competent other, in this social construction process. He explains that this other person functions as an alternative consciousness for the learner until he or she is able to master her/his knowledge and skills using her/his own awareness and control. The adult, or a more competent other of the same age, hence fills a scaffolding function for the child's learning task; the child receives help in negotiating and constructing knowledge and transforming it into a tool he/she is able to control consciously (Vygotsky, 1978).

Socio-cultural theory thus assumes that all learning occurs inside a contextual framework, in a community, where participants contribute in various ways based on their different ages, backgrounds and interests. Rogoff (1990, Rogoff, Turkanis & Bartlett, 2001) refers to this as a «community of learners», while Wells (2001) suggests the term *community of inquiry*.

Creation of meaning

Language is an essential tool in learning processes (cf. Edwards & Mercer, 1987). The use of language – both conversation and written, and multi-modal texts – is understood within the dialogic paradigm (dialogism). Within this schema, the focus is primarily on how meaning is developed through relations between discourse and contexts, and relations between the mind and physical and social environments. Communication consists of meaning-making activities and is understood as an intermediary process.

Meaning is created as a result of negotiation where the parties attempt to create and develop temporarily shared social realities (Rommetveit, 1974). The listener is thus always part of this meaning making together with the speaker, cf. Bakhtin (1981), who claims that no discourse is an individual product. Meaning is created along the way, never emerging completely finished or absolutely clear when uttered. Hence the meaning does not exist in the dialogue itself or in the text, but rather between the speaker/writer and the listener/reader. The participants co-operate on creating and recreating meaning (Dysthe & Igland, 2001; Wold, 1992). The context in a wide dynamic understanding is vital in such a process (Linell, 1998). Bearing this in mind, we can say that meaning making is closely connected to learning. Knowledge is created through language, and dialogue in a wide sense becomes the central arena for learning and development (Nystrand, 1997).

Following this line of thought Mercer (2000, p. 15) states that: «Language provides us with means for thinking together, for jointly creating knowledge and understanding.» Mercer (2000) has introduced the terms *interthinking*, *thinking together* and *co-reasoning* to focus on the joint, co-ordinated intellectual activity which people regularly undertake when using language. Good meaning-making processes are closely connected to good linguistic skills. Children benefit a great deal from training and becoming more aware of the linguistic resources they have at their disposal (Mercer, 2000). There are few studies in this field (Matre, 2000, 2002; Mercer, 2000; Rojas, Drum-

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mond, Fernandez, Mazon & Wegerif, 2006; Wegerif, 2005), and as we consider it, more research is needed to expand our understanding and prepare for better educational practices.

Reading and reading comprehension

We distinguish between the technical aspect of reading – the decoding – and the meaning aspect of reading – understanding what is read – the aspect on which we focus most keenly in our study. Decoding means moving from what is written or printed to the words of spoken language. Understanding what is read may best be described as an active interpretation process (Bråten, 2007). In the words of Garner, Alexander and Hare (1991), comprehension is a result of reader-controlled interaction between the information stored in memory and the information presented in the text.

This interaction process between a reader and a text involves both adaptation of the textual information to the reader's prior knowledge and changing the reader's prior knowledge in the light of the text's information. In all cases comprehension of what one reads may be characterized as an active process of meaning making; a text does not hold any finished meaning that the reader can simply «unwrap». A reader must personally and simultaneously extract and construe meaning in interaction with the text and the context of the reading situation (Snow & Sweet, 2003). When several children read, associate and discuss the same texts in a structured way, as the selected pupils in this study do, their opportunities for interpreting and understanding what they have read are expanded.

Identity development

The concept of identity has been given a central place in the curricula for the Norwegian primary and secondary school together with the concept of *dannelse* (education and culture, cf. in German Bildung)[2]. In teacher education, the subject of education science includes work on making student teachers aware of their role as supporters of the development of children's identity and «dannelse». The Norwegian language and literature subject is also particularly emphasized as an identity subject (cf. Penne, 2001).

Wenger points out in his social-learning theory a close connection between learning and identity (1998). Wenger finds that as learning transforms us and what we can do, it is an identity experience. Identity is not an unambiguous static concept, but relational and dynamic. He therefore claims that education primarily should be understood as being about identity and ways of belonging, both with respect to planning and evaluation.

To these perspectives we can add Ivanic's (1998) contention that identities are developed through participation, through changing vision and voices, and through becoming aware of what is happening. Ivanic (1998) also claims that a person's identity is by and large constructed by the language she or he uses. Hence it is vital to master a language that will help make meaning, understand, see through and interpret life situations. A person must have textual competence in a wide sense to be able to develop a positive identity (Penne, 2001). Mastering an interpretative language is a skill that is unevenly and unfairly distributed among children. Therefore school has an important task in improving children's identity building through linguistic activity.

Reflection and the use of language in social contexts thus play essential roles in the construction of identity. Reflection upon ourselves and our life conditions requires language on a certain level of abstraction. Reflective considerations occur through both oral and written use of language (Penne, 2001). Children reading and talking together

engage in such reflective interaction. Giddens (1996) also points to the importance of the linguistic aspect of identity by calling new forms of identity reflective identity.

Activity theory

In addition to theory elaborated above, we also seek support from socio-cultural activity theory (Engeström, 1987), using it as a backdrop for our analysis, looking to such terms as object, mediating artefacts, community of learners with their rules and division of labour to help us when discussing and reflecting on our data.

Questions

The aim of this study is to get a better insight into, and thus contribute to a better understanding of, how systematic stimulation of children's linguistic and conversational skills, embedded into an action research frame, might affect their ability to participate in dialogues, their reading comprehension and building of identity.

The study aims at answering the following questions:

(i) To what extent and in what way may conscious efforts on the part of teachers to develop their pupils' linguistic repertoires in a third grade classroom influence a group of four children's:
   – Ability to talk and think together?
   – Ability to learn and create meaning in reading and reading-comprehension areas?
(ii) How might active and systematic use of talk in the classroom affect the selected children's identity development?

Methodological approach

To answer the questions an action research project was planned. A model was developed which integrated theory and practice as in-terdependent and constantly shifting in response to the classroom community. The model presupposed a close teacher-researcher collaboration.

Sample and procedure

The participants in this action research were one teacher (Anna), two researchers (the authors) and a third grade school class. The teacher wanted to have a special focus on reading and reading comprehension in her class, where one main idea was that talking about texts enhances the children's understanding of them. She soon discovered that it was difficult for her young pupils to engage in meaningful discussions about what they had read. She discussed her concern with the two researchers (one in language, one in education), and together the three constructed the following four-step schematic actions: (i) the teacher presented a text that the pupils read and discussed in small groups, (ii) the teacher mapped and analyzed the group conversations looking for discourse strategies used by the children, (iii) the teacher evaluated the pupils' work processes, (iv) the teacher introduced discourse strategies from which the children might benefit in their oral conversation.

The class was divided into reading groups, four pupils in each. All the groups had a combination of strong and weak readers. The teacher carried out steps 1 to 4 repeatedly and looked for changes through the data that she collected. She discussed her observations and evaluations with the researchers, and together they decided which discourse strategies to introduce next.

Data collection and data analyses

Data were collected over the course of one year through video recordings, teacher logbooks and notes, together with e-mail and face-to-face communication between the teacher and the researchers. This article confines the analysis to the interaction in one

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group of four children: Siv, Hans, Rita and Rein.[3]

Before entering in to the analyses a brief summary of what happened in the reading and talking project during the autumn in this third grade class is presented: What kind of actions did the teacher introduce to enhance and improve the pupils' conversation on texts, and how did she evaluate the interaction in the group? Then we look into the dialogues in our focus group on three occasions in the spring term. The selected excerpts represent sequences where the children developed topics over some time.

By conversation analysis we will study how the children talked together and jointly developed thoughts and a better understanding of different issues from the text that they had just read. By relating the dialogues to roles and changing contexts a grasp of how the children co-operated, how they positioned themselves and to what extent they included new discourse strategies in their language use will be unveiled. We will reflect upon whether the reading groups have improved their ability to talk together and if they have become better at learning and creating meaning from texts.

Actions and evaluations

The teacher and the researchers found it necessary to structure the conversation in the groups in some way to enhance discussion about the read texts (cf. Engeström, 1987). The first action the teacher introduced was to divide the work between the children in the group, to assign different roles to the participants (Engeström, 1987). They started with the following four roles: *Discussion leader*, *linker*, *text selector* and *image creator*.

The *discussion leader's* job was to find themes and issues from the text that she or he wished to discuss. The *linker* prepared for the discussion by looking for something in the text that was reminiscent of something that he/she had experienced. The *text selector* was to choose one or more words or small sequences from the text that he or she liked and would like to share with the others. The *image creator* was to describe images that the text created in his/her mind and that he/she would like to draw.

Another role was added along the way: *I wonder about this*. The roles were assigned to the pupils by the teacher giving them a card each with a short instruction about their specific role and how they were to prepare for the text discussion and to act in the group. Allocation of roles enabled the pupils to enter the texts they read with a special focus, and also helped them to concentrate on the topic in their dialogues and to make various contributions to the conversation. The children needed some time to try out and familiarize themselves with their roles, and in this way rules were established in the small community.

An evaluation of the conversations between the children at the onset of the action research program, in October, concluded that most groups finished their text conversations quite quickly. They hardly followed up input from the others in their group. They rarely asked questions and also provided very few explanations. As the teacher told us: «It doesn't appear to be natural for them to explain and support their statements.»

The teacher found it necessary to work with the children on how to talk together, on how to develop their language as a mediating artefact (Engeström, 1987). This meant that: (i) During the last part of the autumn they talked about listening and illustrated this through drama exercises showing how unpleasant and frustrating it is when interlocutors do not listen to each other, and also talked about how to signal listening with eyes and body movements. (ii) The children were encouraged to ask follow-up questions.

(iii) They were encouraged to talk more about the topic and to explain more. (iv) The teacher presented video recordings from conversations in the groups and commented on questions and utterances that brought the topic a step further, in this way *reinforcing positive dialogue activities*. (v) The teacher also instructed the pupils to prepare for the conversation in the groups by writing down keywords from the text at home, talking with an adult about the text, and also by making written mind-maps. (vi) By the time the conversations we examine below occurred, the teacher had just mentioned the action to dare to disagree, to oppose.

All these actions were the result of continual reflection and discussion between the teacher and the researchers. Some of the actions turned out to deal with more than just means of discourse.

Analyses and results

To find answers to the research questions conversations from our focus reading group were analyzed on three occasions, in February, March and April, starting about five months after the project commenced. Traits in dialogues were sought that could indicate that the children might have learned something from the actions the teacher introduced in the class.

From October through to early spring the children's conversations in this reading group gradually increased in length. During the initial months the teacher was unsure whether the children managed to gain any benefit from her actions at all. In fact during this time she barely registered any changes until she looked through the videos, transcribed them and discussed them with us, the researchers. In addition to analyzing the dialogues, we also undertook a close reading of talk evolving around a mind-mapping-text from one pupil, Rein.

Dialogues

February 19

Siv, Hans, Rein and Rita were sitting together prepared to talk about today's text: Ole Lund Kirkegaard's *Slottet bak åsene* (The Castle beyond the Hills). The text tells a story about three children who are lying in the grass talking about flowers, beetles and birds, challenging each other. After a while they go and visit a blacksmith who tells them fantastic stories.

Siv, Hans and Rita were classified by the teacher as good readers. Rein was a slow reader and rather immature for his age. Siv's role in this session was to be the discussion leader and ask some questions about the text. Rita was given the task of associating topics in the text to something that she had experienced. Hans was to pick some words that he found interesting, and Rein was to be the image creator, describing what he would like to draw from the text. How did the children then participate in the dialogues around this text? How did they co-operate? To what extent did they make use of «new» discourse strategies? The conversation session on February 19 started as follows (Excerpt 1)[4]:

Siv: I wonder what a mayweed *(Chamomile, in Norwegian 'Kamille', close to the girl's name, Camilla, in Norwegian)* looks like. And then I've written I wonder whether this was only a story or whether it was true.

Rein: Why are you wondering about that?

Siv: Because I never saw a mayweed before.

Rita: xxx xxx

Siv: Mayweed that's a flower.

Rein: Mayweed flower.

/…/

Siv: Was what the blacksmith said true or wasn't it?

Rita: I'm wondering about that too.

Siv: It could be that it was true in the story.

Rein: Anything is possible in stories.

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Siv, as discussion leader, initiated this excerpt, wondered what a mayweed flower looked like and presented two questions dealing with the concept of truth: was the text telling a true story, and was what the blacksmith said true? This brief introductory sequence shows the close interaction between the children. It is clear that they were listening to each other and were following up input from each other by using questions and by supporting, underlining and expanding utterances.

After Rein's concluding words, the conversation continued with Siv returning to her question of what the mayweed flower looks like. The others then proposed a number of colours and colour combinations. They playfully suggested different combinations and laughed. The words became building blocks in a game between them, a game that turned into an episode relating to which colours fit together. All the children participated. Here are some of the «if-so» utterances that emerged:

– If I had a flower I'd have wanted it to be black and white.
– If there's somebody whose house is the same colour as the grass, and then when they tear it down there's nails sticking out and they think they can walk barefoot in the grass, and ouch I didn't know the grass hurts.

Rita followed up this last utterance by specifying that this means that they were walking on nails. This hypothetical situation made Rita associate to something she had experienced, and a long story followed about the time she stepped on a nail. During her narration several comments were made that similar things had happened to others too. Clearly they listened with interest and expressed this. Rein contributed with a comparison: «It was worse for Jesus because they nailed him through his feet.»

Rein participated with many follow-up utterances during this conversation. He also questioned when something was unclear, such as (Excerpt 2):

Rein: What does blacksmith mean?
Siv: They fix things.
Rita: xxx xxx
Siv: It's not exactly that. *(laughs)*
Rein: Things that are broken?
Hans: They make, they make for example horseshoes.
Rita: Yes.
Rein: In a blacksmith?
Rita: No, *(several speak together)* it's like a blacksmith is a person. They only call it blacksmith.
Rein: Can it fly?
Siv: <No, people can't fly.> *(laughter)*
Rita: <No, people can't fly.>
Rein: I thought it was like a ghost. I did.
Siv: It's like, it's a man working with iron things and then he can make /…
Hans: For example horseshoes.
Siv: Then he beats it with a hammer. He burns the horseshoe and beats it and stuff.
Rita: Yeah. And there's a goldsmith too.

If you do not know what a blacksmith is, a significant part of the content in the text «The Castle beyond the Hills» will be incomprehensible. Rein thus must have missed out on much of this text. The question of what a blacksmith is seemed to be a challenging input. Everybody became involved in the subsequent conversation. They explained by *describing*, *giving examples* and *specifying*: A blacksmith fixes things, he makes for example horseshoes, he is a man working with iron things, he beats with a hammer. Rein asked clarifying questions («Things that are broken?», «Can it fly?») and also used a *comparison*. He believed a blacksmith was like a ghost: «I did» he said.

It is clear that here too the children listened well. They interacted attentively. They used many discourse strategies to share their viewpoints. The conversation in this session was dominated by associations. A small story awakened associations to another story. Several times there was a relay of stories. Another phenomenon, also dealing with children's ability to associate, was playing with words. A word might generate thoughts, such as the word kamille/mayweed. It reminded the children of the girl's name Camilla. The children clearly enjoyed playful sequences like this (Excerpt 3):

Rein: Did you say mayweed flower?
Siv: Mayweed, mayweed flower.
Rein: Wouldn't it be funny if there was somebody who was called May, May weed *(Or Camilla, Camilla flower)*.
Siv: I'm May Weed, that's my name.

Rein initiated this little sequence. He rather tasted the word «mayweed» and together with Siv played around with it.

March 18
On March 18 the same four children were gathered to talk about two short chapters from the book *Bernt begynner på skolen* (Bernt Starts in School), written by Kjell Johnsen. The chapters are called «Leggetid» (Time for bed) and «Bernt drømmer» (Bernt dreams) and deal with Bernt, who is starting school and is afraid that he will be teased because of the spectacles he has to wear. In the bathroom in the evening Bernt's glasses fall on the floor. The text suggests that he might have done this on purpose. The children paused at this sequence in the text. They interpreted what they had read and also offered other possible and amusing solutions to Bernt's situation, where he would like to get rid of his glasses.

In this session the same children were given the same roles as on February 19. But what we see here, as opposed to the dialogue in February, is that the children moved between their roles in a more flexible way than before. The conversation was less procedure oriented; it was structured in a less strict way. Conducting a meaningful conversation seemed to be the children's main center of attention (Excerpt 4):

Rita: But at bedtime, then it's for sure, he's trying to break the lenses (of the glasses) like for tomorrow.
Siv: Yeah.
Rita: Yeah.
Rein: He tried to, didn't he?
Rita: Yeah, he put them on the towel and then he pulled it a bit, so luckily they weren't broken.
Hans: He really wanted to do it. He thought he was so weird with glasses.
Rein: He could have thrown them out the window, then
Siv: Then I think it would have been strange if a bird came along...
Rein: I would have taken it, I would /… *(makes crushing sounds)*
Hans: If he'd thrown them out, and then there'd be this bird passing along and then they'd have /…
Rein: … so he's using the glasses at school *(he may be referring to Bernt who throws away his glasses when at school)* so when he's going out the door *(makes bumping sounds with movement)* then he can't see anything so he has to do like this *(uses his fingers to prop open his eyes)*
Anna: So exciting to hear about the glasses. Why did he do this thing with like put them on a towel? Tell me what you think about that.
Siv: He thought they would like fall down.

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Rein: That they would be nice to him. He wanted to be a tough guy.

Rita: Why didn't he just break them like this? *(illustrates crunching with her hand)*

Siv: Well, why couldn't he just knock them right down?

Hans: Why didn't he just throw them out the window? If this was the top of a high-rise and he threw them out the window there, then a bird might have passed and then it could have flown away with the glasses.

Siv: Then he wouldn't have had them back and then he couldn't wear them.

Hans: And then when the bird was to start at school and he went there with these glasses. If they have this school for birds, like, only for birds, only for birds up in a tree, *(laughs and keeps laughing)* and then when he came to school then he would be wearing these glasses.

Siv: Have you started to get bad eyes or? *(speaks in formal Norwegian, indicating imitation)*

Rita is the one to initiate this excerpt, stating that one night Bernt is trying to break his glasses. The other children support her statement. Rein formulates his agreement as a question («He tried to, didn't he?»), signalling that he is not quite sure whether he has understood the text right or not. Rita and Hans confirm his assumption by relating *how* and *why* Bernt tried to get rid of his glasses. In this first part of the dialogue (lines 1–11) the four children together elaborate and settle the main theme in the story they have read.

Rein then continues by suggesting a solution to Bernt's problem, a way out for him: «He could have thrown the glasses out of the window.» Siv responds and takes his idea a step further by introducing a bird into the scene. Rein, however, does not build on Siv's elaboration, and presents another solution in-

stead: he would have crunched the glasses. This he communicates by illustrating with his hands and making a sound imitating something breaking. Hans wants to stay with Siv's (and initially Rein's) focus and repeats the idea of throwing the glasses out the window and a bird passing along. But Rein continues along his line of thought and describes Bernt at school without glasses, depicting this by dramatizing how he walks and how he tries to keep his eyes wide open using his fingers.

The teacher then intervenes with a question: «Why did Bernt put his glasses on the towel?» Siv answers correctly that he wants them to fall down. Rein advances the topic by interpreting and reflecting on Bernt's motive for wanting to break his glasses: Then the other children at school «would be nice to him. He wanted to be a tough guy». The other group members do not join in this interpretation, continuing instead to propose ideas as to how Bernt could get rid of his glasses (why didn't …/if he …).

Once again Hans links back to Rein's initial suggestion of throwing the glasses out the window. Siv supports him, and together they develop this idea into a playful imagined story about a bird coming to the school for birds wearing glasses, and how the other birds then would comment on this sight («Have you started to get bad eyes?»).

Rein's part in this excerpt is interesting. He contributes many initiatives to the dialogue, presents suggestions and even decenters, adopting Bernt's point of view and interpreting his motive for his actions. Rein is involved and eager to tell what he thinks, and to a certain degree he adds to the other children's utterances. The conversation thus develops partly along two different lines; Siv and Hans co-operating, and Rein following his own line of thought. We get two parallel dialogues.

The next excerpt from the March 18th lesson deals with habits for getting ready for bed (Excerpt 5):

Rita: This has happened to me. You go to the bathroom before you go to bed. And then you dream afterwards, when you go to bed.

Siv: Nah, you don't, really.

Rita: You don't?

Siv: No, you can't dream when you're going to bed. Dreams come later, after you've gone to bed, after you've fallen asleep.

Rita: Sure, I know that. *(with a resigned smile)*

Hans: And then perhaps you'll dream about the strict teacher.

Siv: Then it isn't a dream. Then it's a nightmare.

Anna: Why do you dawdle in the bathroom then?

Siv: Where else would we dawdle?

Hans: We really can't dawdle in the morning. Then we would be late for school, so that won't do.

Rein: And we dawdle because we don't want to go to bed.

Anna: So more people than Rita dawdle in the bathroom then?

Siv: Sure. No doubt. Everybody dawdles. That's natural.

Rita initiates the dialogue, and Siv interprets her utterance literally and objects by saying that «you can't dream when you're going to bed. Dreams come later, after you've gone to bed, after you've fallen asleep.» Rita agrees reluctantly. Hans advances the topic, linking to Siv's utterance in a non-focal way, thus changing the topical focus slightly (Linell & Gustavsson, 1987). He comments on what might be the topic of the dream. A «strict teacher», he suggests. Siv opposes again, adopting a meta-perspective on Hans's utterance. When dreaming about a strict teacher, «dream» is not the right word: «Then it's a nightmare.»

Opposition is the means of dialogue that propels this conversation forward. Rein does not participate. We question whether it could be that this way of opposing and reasoning is too demanding for him.

A little bit later the conversation between the children turns to dealing with dawdling in the bathroom. They like to dawdle. Anna asks them *why* they dawdle in the bathroom. Siv responds by returning a question, non-focally linked to Anna's initiative. «Where else?» Hans also answers by contributing a non-focal utterance. Nor does he answer Anna's question, focusing on when to dawdle. Rein is the only one linking to Anna's utterance in a focal way. He answers her why-question by explaining that they dawdle «because we don't want to go to bed.» Siv sums up and concludes by presenting a kind of coda: «Everybody dawdles. That's natural.»

To summarize, the dialogue analyses indicate that (i) the children's participation in the group discussion increased considerably during the research period, (ii) all the children contributed to the conversations in the reading groups and used a varied repertoire of discourse strategies – asking questions, becoming responsive listeners, underpinning their statements, and often presenting hypotheses, and (iii) disagreement and tension in the discussions seemed to trigger rich discourse. We will elaborate more on this in the discussion below.

Written mind-mapping
April 24
In looking at the children's use of mind-maps we confine ourselves to one of Rein's contributions. The text for the reading and discussion session on April 24 is about a family with a dog, a dachshund called Stovepipe. All the children had prepared a written mind-map related to their roles before starting their discussion on the text. Rein's role was «I wonder about …». His mind-map appears below:
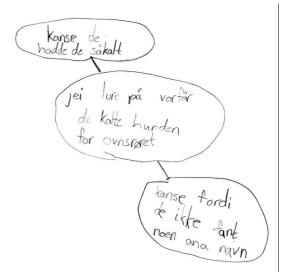
Figure 1. Rein's handwritten mind-map. Translation (from above): mebbe they was so cold / I wander hwy they called the dogg stovepipe / peraps coz they couldn't fond no oter name.

This brief text shows that Rein is interested in finding out why the family called the dog Stovepipe. He suggests two possible reasons: Maybe they were so cold, he writes, probably reasoning that the dog could give them some warmth. The second suggestion for calling the dog Stovepipe is in fact not an explanation at all. He assumes that the name is chosen because they could not find anything better. In the subsequent dialogue on the text they all have read, Rein, finding support in his mind-map, asks: «I have a question about the text. I wonder why they called the dog Stovepipe, because it's a dumb name, don't you think?»

Before anyone manages to answer he adds a new reason on his own: «It's black». Siv is not satisfied with his explanation and opposes: «that's not it, it's because they're so long, they're like this, they're, like so long» (demonstrates with her hands). If that is the reason, another name could be more suitable according to Rein: «Why couldn't they call it Frankfurter then?» Our close-reading indicates that Rein benefits from this combina-

tion of mind-mapping and participation in the dialogue as it takes his reflections from the writing situation a step further.

Discussion

Talking, thinking, and making meaning

The analysis indicates that the nature of the conversations between the four third grade pupils changed during the observation period. Firstly, their conversations lasted longer; the children talked more and interacted more closely. Secondly, the dialogues became less procedural. The children were, at the end of the observation period, less dependent on their roles; they had gradually altered their focus from carrying out the instructions for their roles to seriously discussing and investigating topics with support in their roles. Finally they used a much broader repertoire of discourse strategies.

Looking at the discourse strategies the analysis reveals as follows. (i) The children first and foremost used many questions. They asked about what things meant, and they were curious about the reasons why things happened. «What», «why» and «what if» were prevailing question words. (ii) The children used many if-so utterances. They presented hypothetical situations and created playful imagined stories. (iii) They also gave grounds for their statements; the conjunction «because» therefore often occurred. (iv) Furthermore, they described phenomena by giving examples and comparing. This way of describing things functioned both as an underpinning of statements and as a way of expanding topics and making things clearer. (v) Several times in their dialogues we find that the children played around with words. They tore words apart (cf. Excerpt 3 «may weed»), combined new syllables, reflected upon meaning and played with sounds. (vi) And finally the children tried to understand issues by opposing. They objected to

other's interpretations of words and episodes in the texts just read, and such objections created tension between the participants, often leading to sequences of fruitful negotiation. All these strategies turned out to be useful tools for the children when exploring topics from the texts they had read.

The main teacher actions during the autumn were to ask questions and to listen. Later the word *because* became important, as well as showing the children how to oppose and give grounds for their opposition. Obviously all these means of communication played a central part in the children's dialogues and indicated that the teacher's actions had influenced the way the children talked and interacted in their conversations about texts.

A close look at Rein and the way he participated in the dialogues is a good example of this point. At the outset of our research Rein was the weakest reader and the most immature of the four pupils. He contributed rather little in the group dialogues. Instead of putting his points of view into words, he often demonstrated what he meant by using body language accompanied with some words and illustrating sounds (cf. Excerpt 4 where Rein shows how he would have smashed Bernt's glasses to pieces).

As he often had a problem finding the right words or phrases he looked for other creative ways to express himself. During the observation periods, however, he became much more verbally explicit in his utterances and quite adept at asking questions. In fact, he ended up being the one in the group who was most eager to ask questions, like: What does that mean? Why do you think so? On the other hand, he seldom opposed the other's utterances, maybe because he felt it too demanding to present objecting initiatives since he had to give grounds for his points of view. Such contributions presuppose a rather mature and independent position. Obvious-

ly Rein was not there yet. Asking questions, comparing and elaborating on associations seemed to be the discourse strategies that best met his needs and level of competence. Rein had acquired some very useful tools that he could employ when reasoning and interacting with his fellow pupils.

Writing mind-maps seemed to function as good scaffolding for Rein in the reading group conversations. The rather slow process of writing helped him sort out and put his ideas into words. When he subsequently entered into conversations he then brought with him thoughts that he could build further on in the oral interaction. Vygotsky (1986, p. 128) maintains that: «Thought is not merely expressed in words; it comes into existence through them.» Rein's mind-mapping and the dialogue following his writing illustrate the dynamics between writing, talking and thinking. The writing, as a mediating artefact, seemed to help him to advance his reasoning.

The complex relation between talking and thinking together was easy to observe. Even though we cannot infer directly from what the children said to arrive at what they thought, the discourse strategies observed in the children's dialogues indicate that much thinking was taking place. The children expanded each other's interpretations, they contributed with unexpected associations and new perspectives, they co-reasoned and negotiated to reach shared understanding, or temporarily shared social reality, as Rommetveit (1974) would put it. They were making meaning together in their conversations.

Our findings are supported by Mercer (2000, p. 15) who maintains that: «Language enables us to set up intellectual networks for making sense of experience and solving problems. We use it as a tool for creating knowledge.» The children's activity in their dialogues indicates joint intellectual activity.

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Using the kind of dialogue strategies that we have listed above put quite a heavy demand on our young interlocutors. They had to reason and think creatively to arrive at good answers. There are good reasons to believe that the way of talking we saw in our reading group stimulated the children's thinking.

Our findings allow us to claim that the teacher's actions helped to improve the children's ability to talk and think together and to learn. The students' expanded repertoire for exploring discourse strategies helped them to engage in more active interpretation processes and thus to create a deeper and richer understanding of the texts they had read, stimulating reading comprehension.

The focus on the close relation between linguistic actions and the ability to talk, think and create meaning leads us to consider whether the improvement we saw among the children was attributable to the linguistic actions alone. Of course it was not. The socio-cultural perspective underlines that contexts play an essential part; several other factors have to be taken into account. Especially important here is the small, stable and inclusive community the four children built. They all appeared to feel comfortable and safe in their reading group. It offered them a good contextual framework for investigative talk. The group functioned as a «community of inquiry» (Wells, 2001) and a «community of learners» (Rogoff, 1990). Rein especially seemed to profit from being in this secure environment, co-operating with and being supported by competent others (Bruner, 1986).

The division of labor in the group, expressed through the different roles, also has to be interpreted as an important scaffolding factor (Engeström, 1987). When the children got together in their group, each of them always had something different from the others to contribute, something which made it meaningful for them to enter into dialogue with each other.

Identity

It is impossible to fully answer our second research question based on results from this small study. We are not able to conclude how the active and systematic use of talk in «our» classroom has influenced the children's identity development. But we can report on some clear indications. Focusing on Rein, this relatively weak reader, something more specific about the relationship between teacher actions, learning in the field of reading and writing and identity development, may be gained. On the basis of our empirical data we draw a portrait of Rein where we summarize his development during third grade. For this project the teacher placed him in a group she assessed to be fairly good in the field of reading and writing so that he would have the opportunity to draw on a small, safe and hopefully maximally stimulating reading and conversation environment.

Rein had a twin brother, Tom, who was in the same third grade. Tom was very active and extroverted, with a quite loud and active circle of classmates. Compared with his brother and his friends Rein was the complete outsider. He switched between using baby talk and other inadequate ways of making his presence noticed in his attempts to be part of their group, without succeeding. One of the reasons why the teacher in this action research project placed Rein in precisely this little group, with three good readers and «conversationalists», was to give him the opportunity to be somebody in a safe and small context, with no influence from his brother and his friends.

In an interview after completion of the project year the teacher stated that Rein enjoyed being in this conversation group from day one, and that he grew more confident and more active with each passing week. We also see this clearly exemplified in the empirical excerpts. There is no doubt that Rein learnt from the actions the teacher imple-

mented, and that he developed his reading capacity and linguistic and conversational repertoire throughout the school year, thus becoming a more skilled interlocutor. He complied with the rules the teacher had set up for the conversations and at all times ensured that everything was done by the book. He was also curious and adventurous, tested concepts and twisted issues around, he asked questions when there was something he did not know, and when there were words he did not understand, he took initiatives and introduced relevant comments in the conversations.

He was imaginative and empathic and adopted the perspective of the people and animals he was reading about. He compared what he was reading about to his own experiences, associated and reflected, made guesses and proposals and was continually on the offensive, he sampled words and played with them, emoted with continuing stories or parallel stories and told the others about this in involving and exciting ways. He also used gestures and emphasized points he was trying to make using sounds and body language in a relevant manner. Most of this is exemplified in the excerpts above. He was simply a playful, humorous and imaginative interlocutor who confidently would say what he wanted to say at any time. He was also a good storyteller and an attentive listener, interested in themes and ideas the others introduced in their conversations.

Rein's behavior and use of conversation strategies developed positively and became typical for his conduct in the group. This corresponds to what the teacher-researcher focused on in a retrospective interview, stating that Rein undoubtedly became a better reader, with better understanding of what he was reading, and a better interlocutor in the course of this period. He hugely enjoyed being in this group, he looked forward to the Thursday lessons, he became curious about and fond of books and he became good at conducting long and varied conversations. The teacher added that in conversations with her, Rein's parents had also mentioned that he liked the Thursday sessions very much, and that they were happy about their son's progress both academically and socially through the group programme he was allowed to participate in.

According to this study's socio-cultural theoretical framework we can conclude that Rein's identity development was positively influenced by his participation in this action research project. We can illustrate this by quoting from the interview with teacher Anna. She said: «I'm confident that because Rein was given the opportunity to contribute and participate more in the little group than in the full class, his self-image was improved during these lessons.» What the teacher discovered when she studied the videos from the focus group helped her to better see the children's competence and also what they were struggling with. It helped her to see how they made their ways into their proximal zone of development (Vygotsky, 1978).

Closing remarks on the use of theory

Socio-cultural activity theory provided a good framework, a sound basis and a useful set of concepts for analyzing and understanding our empirical findings. Nonetheless, a theory that includes a cognitive perspective is necessary to gain a deeper understanding of each child's learning, of what the child is actually doing and understanding (Bråten, 2002; Helstrup, 2002). Socio-cultural activity theory and the socio-cognitive perspective need to be supplemented with theories that include children's emotional and physical processes and the importance of their own motivation in relation to learning activities when describing the learning activity.

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Bjørkvoll (1998), for example, points out how learning must be anchored to something the person stands for, something that is creative, playful in the person, something he or she is really interested in. This corresponds to what Deci and Ryan (1994) contend in their self-determination theory. They point out that man always has an inner wish to explore, understand and learn from his surroundings, and that such a personal active orientation is essential both when it comes to acquiring cognitive skills and experiencing positive self-development. Such inner motivation, they contend, must be present if optimal learning is to occur. External motivation that has been internalized and integrated into a person's self-perception may function in a similar way.

A socio-cultural understanding of how identity is developed can be extended to include social-psychology traditions, as seen for example in Hall (1991, p. 10, 16) who contends that identity is the story we tell of the self to learn who we are ourselves. He also examines how we want to believe that this self, this identity, is something deep inside us, something stable we may reflect upon. Moreover, he finds the social dimension and how it is internalized in the self to be important, stating, for example, that no identity is developed without relationships to others. A dialogue occurs between the self and others on a symbolic level. In this process identity is developed over time.

In conclusion: Interesting opportunities exist in expanding the socio-cultural framework by including other theories from various academic traditions in order to analyze the type of empirical findings presented in this paper. This will allow us to show more clearly the tension between social and individual elements in children's learning and identity development.

Notes

1 The foundation of this article is a large co-operative project based on language/communication science and education. The title of the project is «Talk, text and thinking together. Classroom studies of spoken and written language as tools for children's learning and personal growth».

2 *Dannelse* is understood to be a socializing process which leads to understanding, mastering and being able to participate in ordinary, valued cultural utterances. Dannelse thus implies both ways of thinking, and the potential for acting and knowledge (Aase, 2008).

3 All the names in the article are pseudonyms.

4 Transcription legend:

(Italics) context information + facial expressions, gestures and other non-verbal acts

< > angled brackets around subsequent utterances indicate overlapping speech

… speaker interrupts himself/herself
/… speaker is interrupted by another

xxx incomprehensible speech

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