



“BUT BEFORE YOU SAID YOU BELIEVED THAT...”

A LONGITUDINAL STUDY OF STRUCTURED TEXT TALKS IN SMALL GROUPS

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Abstract

A three year longitudinal intervention study is presented where two conditions of reading instruction are compared. In a base condition six teachers – four in the experimental groups and two in the control groups – and their students in grade 4-6 discussed expository texts during a regular lesson. The discussions, which took place in small groups, six students in each group, were videotaped. The majority of the students were poor comprehenders.

In the intervention condition, the teachers in the experimental groups used a new approach of comprehension instruction, Questioning the Author, after repeatedly having participated in seminars led by the investigator where the model was practised. Dependent variables were the type of questions asked by the teacher, and the students’ response behaviour and interaction with the texts.

During the regular lessons, most of the teachers asked purely factual questions where the students just had to retrieve information from the text to be able to answer them. The students made few inferences and reflections.

During Questioning the Author lessons in the experimental groups, the teachers’ question types had undergone a change. The number of purely factual questions had decreased. Instead there was an increase in the number of inferences and half-open questions. This was not the case in the control groups.

The students interacted more actively with the text during Questioning the Author lessons. They clearly made an effort to explore ideas in the text and made numerous inferences and reflections. The students in the control groups seldom got the opportunity to wrestle with text ideas.

Introduction

Comprehending of texts is part of the daily routine for most Swedish students 6 years and older. However what kind of texts students read vary from grade to grade. In grades 1 and 2 focus is primarily on learning to read, and narratives are mostly used to teach reading skills. These texts are personal and include such elements as theme, actors, plot, and conflict. Thus the texts are often exciting and it is fairly easy for the young reader to become involved and

identify him- or herself with some of the actors. The meaning-making process is mainly directed at understanding how a story unfolds and how the different elements contribute to its unfolding. Most of the young readers understand the essential features of narrative texts adequately.

In grade 3 the students are introduced to expository texts and from grade 4 on there is an increasing emphasis on this text type in Swedish schools. Expository texts differ from narratives and place different demands on the reader: Expository texts present facts, opinions, problem-solutions and are mostly impersonal (Lundberg, 2002). When reading an expository text the student has to make sense of the information so that it can be understood and learned. Moreover many content area textbooks are often written beyond the students' grade level reading ability. They are often information dense. Most of the content is unfamiliar and furthermore there are complex and varied syntactical structures, abstract concepts, low-frequency words etc- (Gajria, Jitendra, Sood & Sacks, 2007). It is not as easy for the reader to be engaged and feel involved in this type of text. The expository texts present unique challenges to the students because they often require application of more complex cognitive operations to extract meaning during reading than narrative texts do.

In Sweden the comprehension of texts has been in focus for psychology research but unfortunately not for educational research (e.g. Lundberg, 2002). However, in other parts of the world educational reading research plays a more important role for example the works of Dillon (1990), Nystrand & Gamoran (1997). There is a trend of poorer reading comprehension among Swedish students during the last decade. An increasing number of students seem to have difficulties dealing with the demands placed on them (Rosén, Myrberg & Gustafsson, 2005). The alarming reports demonstrate the need for further research in order to see how the students process expository texts when reading, and whether their reading comprehension could be improved.

The complexity of reading

Reading is indeed a complex activity basically consisting of word decoding and comprehension. Word decoding is the "bottleneck" in the meaning-making process. When students can decode only with effort, decoding competes with comprehension efforts for the limited capacity available for processing of text (Lundberg, 2002). When students decode with automaticity they can concentrate on understanding what they read.

Palinscar and Brown (1984) have demonstrated that how well a student can understand an expository text depends on 1) the text, 2) the compatibility with the readers' knowledge and the text content 3) the active strategies the reader employs to enhance understanding and to circumvent comprehension failures, and 4) classroom discourse.

Texts must be coherent otherwise the readers are not able to identify relations among the text ideas (Beck, McKeown, Sinatra & Loxterman, 1991). Limited prior knowledge and inadequate reading strategies as well as lack of motivation and task orientation also influence comprehension (Poskiparta, Niemi, Lepola, Ahtola, & Laine, 2003).

Research has clearly ascertained the relationship between strategic processing and comprehension. Strategies are processes for enhancing comprehension and overcoming comprehension failures. However, few teachers seem to be aware of the necessity of encouraging students to use such strategies, or modelling them for their students (Dole, 2003). This situation may be partly attributable to the fact that teachers are not often aware of their own strategic processing of texts because for many adult strategic readers text processing has become automatic. Another reason can be that strategy instruction is difficult to implement effectively in classrooms.

As already noted, comprehension is influenced by classroom discourse. Several studies have demonstrated that it seems to be the privilege of teachers to ask questions. A classical pattern of classroom discourse is a cyclical pattern of three part sequences: Initiation-response evaluation (IRE) (Dillon, 1990). The IRE- pattern assesses comprehension but does not assist the process of comprehension (Beck, McKeown, Sandora, Kucan & Worthy, 1996). A dilemma is that many teachers seem to have a strong belief that if students just read repeatedly, they will become good comprehenders also of expository texts. However, there is no reason to believe that students automatically will discover that they could use adequate reading strategies (Gersten, Fuchs, Williams, & Baker, 2001, Pressley, 2002). Consequently, they need to be instructed when they start reading expository texts since these texts differ from the narratives they have read earlier (Beck et al., 1996; Pressley, 2002; Dole, 2003).

Structured text talks

Many poor readers have developed a low self-esteem from continuous failure to understand texts and from continuous days at school filled with the under current message: “You are stupid and there is nothing that can be done about it.” To avoid further failure, many students have developed various avoidance strategies, like using a minimum of effort when reading: the underlying attribution being that if you do not waste a lot of energy, then your failure will not be so big. If you do not try, you do not fail. Such strategies may help students to fulfil the aim of avoiding failure but will not promote deeper comprehension (Taube, 2000).

International research over twenty years has shown that instruction in comprehension has increased students’ comprehension (for a review see Gajria, Jitendra, Sood & Sacks, 2007). The instruction has taken several forms, for instance models for structured text talks in the classroom (Palinscar & Brown, 1984; Beck, McKeown, Hamilton, & Kucan, 1997). Descriptions of how students can learn through participation in collaborative discussions led by an adult can be traced to Vygotsky’s notion of the zone of proximal development (Vygotsky, 1962).

Why text talks about expository texts?

When reading novels, short stories and poems, students and their teachers often discuss the author’s message. More seldom do they seem to do so when reading expository texts. Many students tend to attribute their difficulties in understanding expository texts to their own shortcomings as readers. However, it is of vital importance to make them aware of the fact that behind each expository text there is also an author.

One model for structured text talk where the author is focused is Questioning the Author (henceforth QtA). In QtA the text is viewed as the product of a human author who is potentially fallible. Armed with this perspective, students can view texts as less impersonal, authoritative, and incomprehensible, and realize that texts are open-ended and incomplete and that as readers, they have to contribute something to complete it, for instance by asking the author hypothetical questions. QtA deals with the text through teacher-posed author-oriented queries, such as “What is the author trying to say” and “What do you think the author means by that?” The purpose of these queries is to assist students in their efforts to understand when they are reading a text the first time.

QtA takes place on-line, with students reading segments of the text and discussing the ideas and events encountered. The teachers have segmented the text in advance. The

segmentations have been made where the students may be expected to have difficulties. The students stop reading in this place and perform collaborative construction of meaning by “questioning the author”. Stopping to discuss an expository text also allows readers to consider different alternatives. Questioning begins by eliciting what the author says and what that actually means and how it connects with other text ideas. Thus, QtA encourages collaborative discussions in which students are forced to deal with text ideas in order to construct meaning. Wrestling with the expository text during reading gives students the opportunity to learn from one another, to question, and consider alternative possibilities, and to test their own ideas in a safe environment (Beck et al., 1996, p. 387; 1997, pp. 19, 47ff).

This is very different from reading a whole expository text silently in the classroom and then discussing it. That later way of reading assumes either that students have been able to make sense of the text on their own, or that they can articulate the difficulties they have encountered in the expository text when it is discussed in the classroom. In QtA teachers apply different strategies to make students “wrestle with text ideas”, i.e. teachers can model confusion, identify problematic language and difficult ideas in the expository text, and ask queries that help focus the students’ thinking. All these can serve as comprehension strategies that the students, after practising, will learn and use on their own (Beck et al., 1997, p. 19f).

The teacher has a central role in the structured text talk as a facilitator, guide, initiator and responder. The whole class, including the teacher, is constructing meaning of the expository text during a QtA lesson. The teacher is attentive and responsive to students’ comments in order to guide the discussion in productive ways (Beck et al., 1997, p. 21).

Aims

The overall aim of this three year longitudinal study was to evaluate a new approach of comprehension instruction, QtA, and to investigate to what extent and in what way– if any – QtA change over time teachers’ and students’ interaction with expository texts. The following more specific research questions- three base line issues and the critical issue of the intervention effect- were focused on:

- (a) What types of questions do teachers regularly ask when reading expository texts in the classroom under typical or regular classroom conditions?
- (b) How do students regularly respond to these questions?
- (c) What strategies do the teachers typically and regularly use to get the students to interact actively with the text while reading?
- (d) Can structured text talks change over time: teachers’ question types, students’ answers, teachers’ and students’ strategies and poor comprehenders’ participation in text talks?

Method

The QtA approach of segmenting the text and the idea of questioning the author was adopted. However, there were some differences between the present study and Beck et al. (1996). There were more teachers participating in this study and for a longer period of time, i.e. three years. The procedure also differed. The students were instructed to skim the text first, to get a general view of the material before the text was segmented. Beck et al. started directly segmenting the text. Furthermore, like Palinscar and Brown (1984), the students read the texts in small groups. There were also control groups in this study with typical approaches to text reading to obtain a baseline for comparison of teacher behaviour and student responses over time. [1]

Main focus was on poor struggling readers. Although the group of poor struggling readers is very heterogeneous, the poor readers in this study had according to their teachers problems with: identifying main ideas and supporting details, drawing inferences, relating new information to prior knowledge and actively monitor their comprehension. Torgesen (1982) called them passive readers because they lack or fail to activate reading comprehension strategies to access information in textual material and, typically, do not monitor and evaluate their understanding of text.

Participants

Six groups of students from four classes in four rural schools in the Swedish county of Västra Götaland participated in the present study- four of the groups were experimental groups and two control groups- Since the study was performed in a rural area the number of good and poor comprehenders to choose from in each class was limited. Furthermore, there were not many students in each class. Eight good comprehenders and 16 poor comprehenders were selected from two of the classes. From the other two classes it was just possible to select 12 students – four good comprehenders and eight poor comprehenders. The students attended grade 4 at the beginning of the study and their average age were 10,3 years. [2]. There were six students in each of the six groups – two good comprehenders and four poor comprehenders. Good comprehenders were included to facilitate discussion and instill cognitive courage among the poor readers (Lundberg, 2005). The students were selected on (a) the basis of tests of decoding and reading comprehension together with (b) teacher ratings of the students' attitude to reading, their ability to reflect and infer, and their propensity to superficial reading. The comprehension was investigated with two group-administered tests: (a) one, the SL 40, used the multiple choice format where the student was required to read a sentence and select the correct picture from five alternatives (Nielsen, Kreiner, Poulsen & Sjøgaard, 1997). (b) the second comprised three texts, – two of them consisting of connected prose texts, and one of a document task, designed for 9-year-old students –from the IEA (=The International Association for the Evaluation of Educational Achievement) reading literacy study (Elley, 1994). The multiple choice format was used here as well. The tests as well as the teachers' ratings indicated that the poor comprehenders had difficulties understanding what they read although their decoding was considered adequate. [3]. The tests were administered by the SEN (=Special Education Need) coordinator. In order to investigate whether the students' comprehension had increased or not, they were exposed to two group-administered tests the following year, the SL 40 (Nielsen et al.) and the DLS reading comprehension test (Järpsten & Taube,1997) and at the end of the study they were exposed to the two tests again. [4] Although the students in the experimental groups attained a higher score than those in the control groups, there were no significant differences between the experimental groups and the control groups.

Six teachers, four female and two male, also participated. The teachers were selected because they were interested, not because they were nominated as exemplary. Teacher Berg and teacher Elf shared the teaching in one of the experimental classes and so did teacher Strom and teacher Flod. Four of the teachers had long experience of teaching from 16-33 years. One of them, a teacher in one of the control group, had only 3-4 years of experience. The names of the students and the teachers are fictional.

Material

In all there are 34 videotaped lessons. The data for the first year was collected in December 2004, and included 18 videotaped lessons. The data for the second year was collected in the spring of 2006 and included 5 videotaped, 20- 30 minute lessons. The data for the third year was collected in the spring of 2007 and included 11 videotaped 20 minute lessons [5].

Experimental groups.

2005	2006	2007
4 regular and 8 QtA videotaped lessons	3 videotaped QtA lessons	7 videotaped QtA lessons

Control groups.

2005	2006	2007
6 videotaped lessons	2 videotaped lessons	4 videotaped lessons

Figure 1. General design.

A total of 10 texts were used, eight of the texts were taken directly from textbooks and two of them were taken directly from newspapers. For the first videotaped lesson, the regular lesson, the teachers, in the experimental groups as well as in the control groups, chose the texts. The texts varied in range from six pages to 294 words and were taken from textbooks in geography and science. The longest text was chosen by teacher Berg in the experimental group. Since it was their first videotaping, it seemed fair that the teachers had a text they felt comfortable with. For the QtA lessons and the remaining control lessons the investigator chose the texts. The five QtA texts varied in range from 214 words to 252 words. The texts dealt with the conditions Swedish children lived under during the twentieth century, and the conditions of children in other countries, i.e. “Save the children”, child soldiers and a text about an eight year old Chinese girl who was forced to run a marathon each day.

The texts may seem short compared to the texts used during the regular lessons. However, all texts were characterised by being rather information dense with several gaps in them. Furthermore there were some infrequently used words and concepts in them. Consequently, poor comprehenders were expected to encounter difficulties in gaining a deeper understanding if they were to read the texts silently to themselves in the classroom.

Each text was introduced to the teachers in the experimental groups and the control groups one week prior to videotaping. None of the students or the teachers in the experimental and control groups had met the texts before at school.

Procedure

For the regular lessons, the teachers were instructed to talk, with their students during 20-30 minutes about a text taken directly from a textbook. The same instructions were given to the teachers in the control groups. After the regular lessons, the teachers – except the teachers in the control groups – were invited to participate in seminars, led by the investigator, to put theory into practice. Without a theoretical understanding of reading comprehension and different models for enhancing reading comprehension they learn, teachers are unlikely to retain or to use models effectively or reliably (Dole, 2003).

In the seminars the regular lessons were analyzed regarding teacher questions, students' answers, teacher strategies etc. Furthermore current reading research concerning reading comprehension, reading strategies, different question types, etc, was discussed. It was also discussed what makes a text easy or difficult to understand. During these seminars the teachers were acquainted with Questioning the Author. They were also introduced to author-oriented queries, designed to initiate and focus discussions and different strategies to make students wrestle with text ideas (Beck et al, 1997).

Furthermore there were demonstration lessons where the investigator practised QtA with the teachers. The investigator modelled the teacher's role while the teachers were asked to take the students' role. The teachers were also given several opportunities to practise segmenting texts.

Between the seminars QtA was practised in the classroom, and during this period the author also visited the classes. During these visits the students were also explicitly informed that the activities were general strategies to help them understand better as they read, and that they should try to do something like this when reading silently on their own.

Throughout the interventions the teachers were told that the queries and moves were not a set prescription for creating discussion and/or helping the students wrestle with text ideas; rather they were to be seen as a resources they could draw upon to keep students engaged in the constructive work of building understanding (Beck et al., 1996).

For the first, second and third QtA lessons the teachers were instructed to talk with their students during twenty to thirty minutes about the text but during the fourth and fifth QtA lessons only twenty minutes. The same instructions concerning the duration of the lessons were given to the teachers in the control groups.

Results

The data to be reported here are based on videotapes, transcribed versions of them and observation summaries. Results, based on transcripts of lessons over the three years were compared to lessons taught before the teachers began participating in the intervention study.

First the teachers' questions and the students' answers will be presented.

Furthermore representative excerpts from the text talks illustrating the teachers'/students' strategies will be given.

Teacher questions and student answers

From earlier research and experience (Reichenberg, 2005) four main question categories and a few subcategories could be identified:

1. *Factual*, where the students just have to retrieve information from the text to be able to answer the teacher's question, e.g. "Do bats have good eyesight?" *Specific factual*, questions where the teachers encourage students to express themselves in their own words., e.g. "What was the segment about, that you just read aloud?"

2. *Check knowledge*, where the teacher wants to check if the students know, for instance, the meaning of a word or if they have the necessary prior knowledge, e.g. "How many years do you have to attend school? "

3. *Open-ended*, where there are several possible answers to the question and the answer is not to be found in the text. *Half-open questions*, are included here, e.g. "He was eleven years

when the war started, when he was twelve he learnt how to kill. What comes to mind when you are reading this text?" ("Child soldiers").

4. *Inference questions*, where the students have to read between and beyond the lines to be able to answer the questions, e.g. "Why do you think the children had to finish school and start working?" (See Cain & Oakhill 1999, for a further discussion of inferences).

Question´ here refers to any utterance by the teacher related to the act of questioning the students. Procedural questions, rhetorical questions and discourse maintenance questions, (e.g. giving turns, "Does anyone else have any suggestions?") and questions not related to the text were left aside e.g. "Did anybody watch TV the other day? There was a programme about children living in poor circumstances?" (teacher Stone in the control group).

Repaired questions, i.e. questions repeated or paraphrased, were coded as one (see also Janssen 1996). The investigator categorized the teachers´ questions. To determine reliability an interrater reliability test was performed. Two independent raters got the different question categories described according to the investigator´s definitions. However, the two raters were not allowed to see the investigator´s categorizations. In order to give the raters exactly the same information the definitions were written down. Then, independently of each other, the raters categorized the questions. Lastly, the raters´ categorizations (see Larsson 1986, 36) were compared with those of the investigator. There was a 95 per cent agreement between the investigator and the raters. The discrepancies were solved in discussions with a third rater (See Appendix 1).

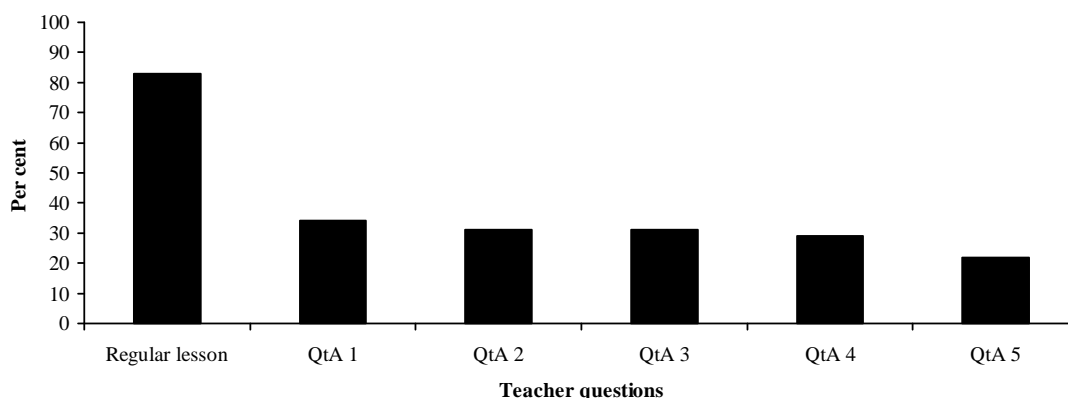


Figure 2. Teacher questions: factual questions

As can be seen from Figures 2 and 3 factual questions and check knowledge questions dominated during the regular lessons. Only one of the teachers in the experimental groups asked an inference question.

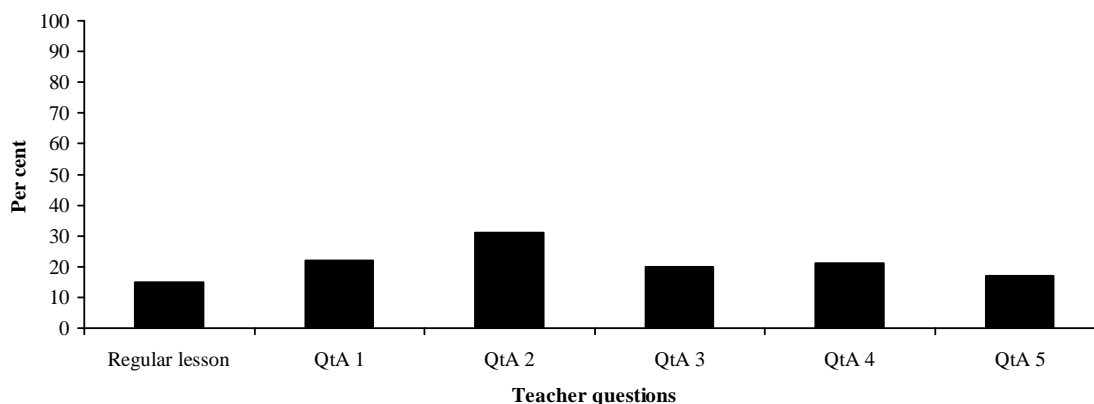


Figure 3. Teacher questions: check knowledge questions

One tendency, during the regular lessons in the experimental as well as in the control groups, was that the teachers asked numerous questions where the students just had to answer with one word. Another tendency was to use the IRE-pattern, i.e. the teacher nominated a student to answer his question, but the teacher already had the correct answer in mind and wanted the student to figure it out. Most often the teacher evaluated the students' answers as can be seen in the example below:

The teacher (here called Berg): David, could you start please, and tell us a little about sheep?

David: Well, they are very patient animals, and they are of great value to the environment.

Berg: What do you mean by "patient animals"?

David: They are hardy animals.

Berg: What do you mean by hardy?

David: They can bear cold weather and such.

Berg: Yes, ok, since they have such nice woolly coats. Right, and you can also say they are of great value to the environment. In what way?

David: I don't know.

Berg: What do you think Nisse?

Nisse: What?

Berg: David says that sheep are very patient animals. They can stand cold weather, live outdoors and they are of great value to the environment. In what way are they useful to the environment?

Nisse: Eh? Are we talking about sheep now?

Berg: Yes, now we are reading about sheep.

David: *Points at the picture.* Mr Berg, what is this picture supposed to mean?

Berg: We are talking about sheep now. We can talk about that another time. Yes.

Turns to Nisse.

Nisse: Well, they just eat and stuff. And, then lamb is only 6-8 hg per person. *Reading directly from the text.*

Berg: And year?

- Nisse: What?
 Berg: So, what advantages do we have of sheep? Humans want to derive advantage of everything. We don't keep sheep just because they are cute.
- Nisse: We get lamb.
 Berg: Meat, yes. Is there anything else that we use?
 Nisse: The tongue.
 Berg: Yes. Is there anything else that we use from sheep except the meat?
 Nisse: The horns.
 Berg: The horns? Well yes, maybe. Then there is something else, you know. *Points at Ellen.* You can answer that.
- Ellen: The wool.
 Berg: What do we make from that?
 Ellen: We can make different kinds of blankets.
 Berg: You shear sheep.

And so the lesson goes on. However, David's interest is suddenly awakened. He has discovered a picture and is eager to know what it is supposed to mean. But, the teacher responds with: "We are reading about sheep now." Then the teacher wants to know what one can get from sheep. He already has a special answer in his mind, i.e. wool, and wants the students to answer this way. When the students do not answer as the teacher expects, he is at a loss as what to do.

However, he does not take the opportunity to give them encouragement to express their own ideas. Neither does he make any attempts to draw the students' comments together, or to highlight the meaning or significance of their answers. He just simply collects their answers without taking the opportunity to promote the students' thinking.

To read a text about animals on a farm can be difficult for students living in a city, but the students in this study live in the countryside and some of them even live on a farm. Consequently they have good prior knowledge of rural life. If the teacher had asked inference questions the students would probably have been able to answer them. However, the teacher mostly asked factual questions and the students read directly from the text when answering.

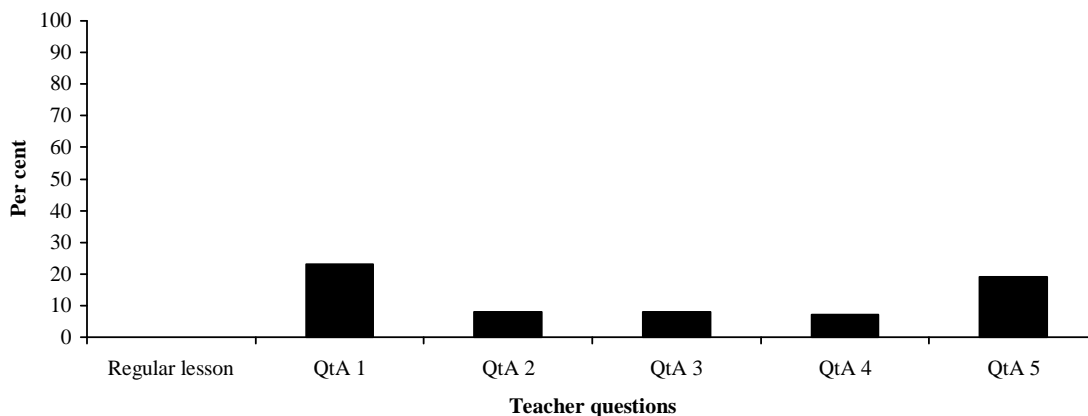


Figure 4. Teacher questions: open-ended questions

As can be seen from Figures 2-5 there is a change over the three years of the communication patterns in the experimental groups. The number of purely factual questions has decreased dramatically during the QtA lessons. There is a tendency among the teachers in the experimental groups to ask the students to express themselves in their own words, i. e. to ask specific factual questions. There is also an increase in check knowledge questions, but contrary to the regular lessons the teachers check not only the meaning of words but also if the students had the necessary prior knowledge (Figure 3).

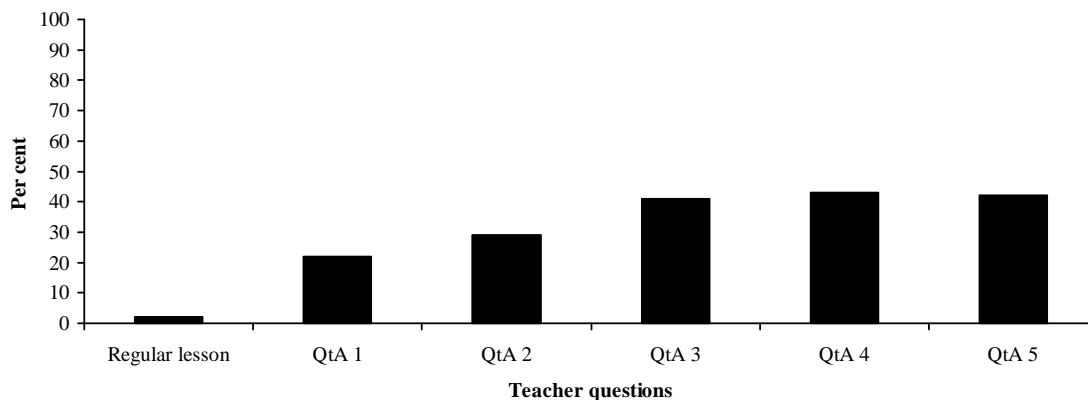


Figure 5. Teacher questions: inference questions

Regarding the open-ended questions the teachers mostly ask the students to compare what they read in the text with their prior knowledge, i. e. half open questions (Figure 4). There is

also a dramatic increase of inference questions during the second and third year (Figure 5). (See Appendix 2, for frequencies- the four main question categories and the two subcategories). The control groups followed the regular, conventional or typical procedure for instruction without any specific directions or encouragement of the teachers to involve the students in constructive dialogues. The data bases from the control groups, in terms of questions from the teachers and responses from the students, categorized according to our basic categories, were surprisingly sparse. The three year period with repeated recordings of the communication patterns in the classrooms during the sessions yielded a total of 21 factual questions, 36 check-knowledge questions, 31 open-ended questions and only 14 inference questions. These numbers are too small to justify a specification for each recorded session and for each teacher. No specific trends over time, in the limited data set, could be discerned. Only two comments can be made. The limited verbal activity in terms of our question categories is indeed conspicuous in the control condition. Inference questions are very seldom used over the three years, whereas factual questions and check knowledge questions clearly dominate. In the control groups, the teachers never asked the students to express themselves in their own words and especially one of the teachers asked many questions not related to the text, for example:

Teacher Stone: Do you like coming back to school after your summer holidays or would you have preferred a longer holiday?

The teacher Stone also had a tendency to answer the question he asked himself.

Teacher Stone: Sweden did not participate in the Second World War, did we?

Charlotte: No.

Louise: I don't know.

Teacher Stone: No, we didn't.

Another tendency was to speak much:

Stone: Did anybody watch TV yesterday?

Since nobody had watched the programme inquired about, the teacher informed the students about the content for the rest of the lesson. He did not realise that the time was out until one of the students asked:

Doesn't the lesson end now?

Teacher Stone: Oh, my God have twenty minutes already passed?

And so the lesson ended without any summary.

Students' answers

From earlier research and experience (Reichenberg 2005) five types of answer categories could be identified:

1. *Retrieved information* directly from the text, *word by word*
2. *Retrieved information* from the text but *in their own words*
3. *Inferences*, i.e. read between and beyond the lines.

4. *Reflections*, includes commentaries about the text and pupil initiated questions, e.g. "Why were the schools in the countryside so small?"
5. *Questions* about the meaning of words

Repaired answers, i.e answers repeated or paraphrased, were coded as one. The investigator categorized the students' answers. To determine reliability the same interrater reliability test was performed as described above. There was a 95 per cent agreement between the investigator and the raters (See Appendix 1).

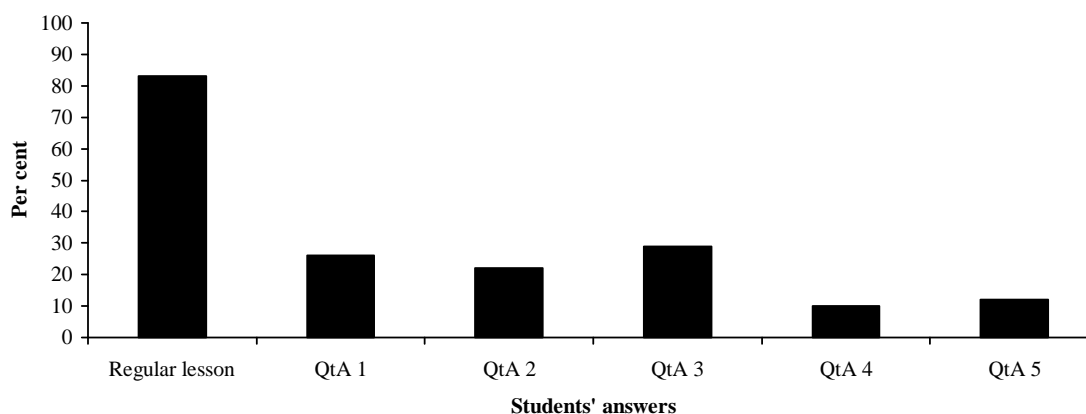


Figure 6. Students' answers: directly from the text

As can be seen from Figures 6 and 7 very few students chose to express themselves in their own words during the regular lessons. Only one inference and two reflections were made. Furthermore, none of them questioned the author or commented the text. The open thinking and cognitive efforts seem to be done by the teacher.

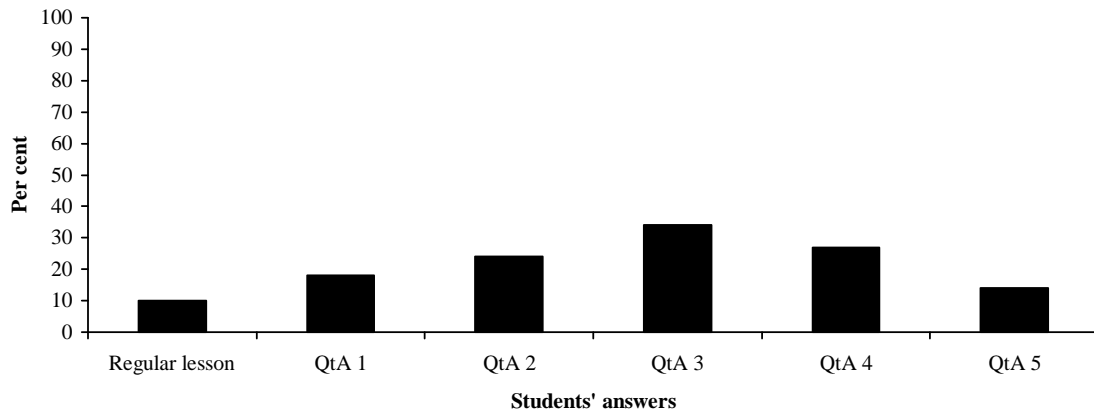


Figure 7. Student answers: own words

As can be seen from Figures 8 and 9 there is a change over the three years of the students' answers in the experimental groups.

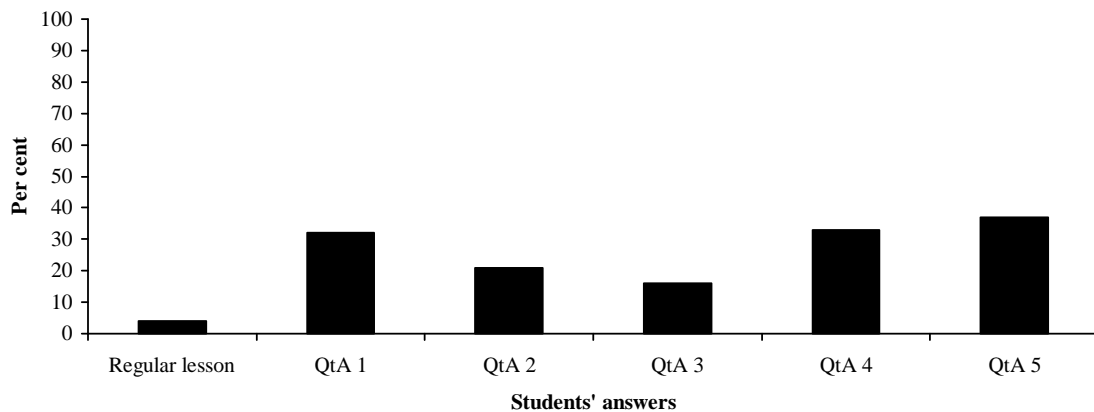


Figure 8. Students' answers: reflections

The number of answers retrieved directly from the text has decreased. Instead the number of inferences and reflections has increased. There is a dramatic increase during the third year. More than half of the answers were inferences and reflections (See Appendix 2 for frequencies).

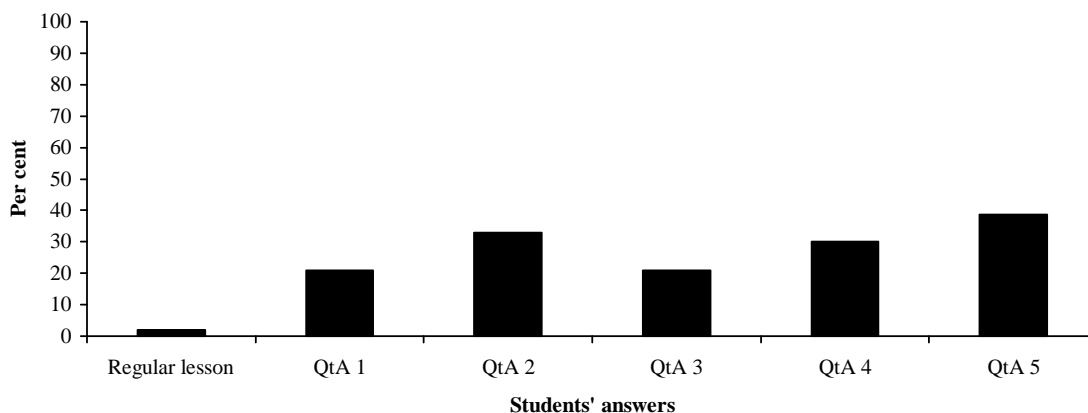


Figure 9. Students' answers: inferences

Since the number of teacher questions were limited in the control groups there were also limited student answers and the answers showed the similar pattern as the teacher questions. The three year period with repeated recordings of the communication patterns in the classrooms during the sessions yielded a total of 15 student answers directly retrieved from the text, seven with students using their own words, 12 inferences, 27 reflections and two student questions about the meanings of words. These numbers are too small to justify a specification for each recorded session and for each teacher. No specific trends over time in the limited data could be discerned. Only one comment can be made when the teachers in the control groups asked inference questions the students were often eager to grapple with text ideas to be able to answer.

Teachers' strategies and students' interactions with texts

The teachers made no segmentations during the regular lesson. During the QtA lessons they made between four and ten segmentations in each of the five texts. At each segmentation, questions were asked. Usually the teachers started asking a question similar to teacher Flod: "Could you please tell us, in your own words, what this segment was about?" And then the teachers continued asking different questions to get the students to wrestle with the text ideas. When the segment had been thoroughly discussed it was summarized by the teacher during the first year. During the second and third year this changed and the teachers asked the students to summarize. There were no segmentations or summaries in the control groups.

During the first year the students did not comment their peers' contributions spontaneously:

Teacher Skogh: The text states that the classes consisted of students of different ages. What does that mean?

- Per: That the schools were not so big, and a single class could not have the classroom to themselves, so they had to be there together with the other classes.
- Alva: I think so too, but maybe there were so many students in one single classroom because they did not have enough teachers.
- Fredrik: They did not have classrooms enough.

The students raise their hands before inferring. This changed during the second and third year. In the text excerpt below the students have just read a segment about a Chinese girl who ran a marathon each day and teacher Skogh asks an inference question:

- Teacher Skogh: Do you think she runs a marathon every day voluntarily?
- Anne: No.
- Charles: Maybe.
- Teacher Skogh: A moment please. You have to speak one at a time.
- Anne: I think she has chosen to do so voluntarily. It does not seem necessary to do so. She has to go to bed at five o'clock in the afternoon.
- Charles: I think...she wants to participate in the Olympic Games and she must be aware of the necessity to train very hard.
- Peter: I think she must be mad.
- Anne: I agree. You don't run a marathon every day.
- Philip: How can she have so much time to run?
- Anne: Maybe her family is poor and if she wins a marathon they will get money and get sponsors and the like. So maybe it is her father's wish that she will get an Olympic medal.

The teacher does not need to distribute the word because the students, also the poor comprehenders Anne and Peter, spontaneously contribute to their peers' comments and together they manage to read between the lines.

To make the students think in their own heads teacher Skogh apostrophizes the author and uses the verb "think".

- Teacher Skogh: What do you think the author wants to tell us in this text segment?
- Anne: That he, he knows what it is like to be a murderer and he has probably murdered several persons and now he feels guilty and wants to stop other children from murdering.
- Teacher Skogh: Hm.
- Anne: Or he thought it was horrible and now he wants to prevent other children from being used as child soldiers.
- Teacher Skogh: Hm.
- Anne: It is rather horrible what he has done, and he has probably murdered so many persons.

After Anne's answer, teacher Skogh just says "Hm" thus encouraging Anne to think further.

The teacher encourages the students to turn back in the text when they discuss child soldiers' situation.

- Anne: I think many child soldiers participate in guerrilla wars to get money to their families...
- Teacher Skogh: But before you said you believed that their families had been killed and that's the reason why the child soldiers did not hesitate to kill other people.
- Philip: Even child soldiers differ.
- Alva: I agree. They differ. I can't imagine child soldiers having parents.
- Philip: Nor can I. Their fathers are probably in the army too.
- Alva: Maybe their parents, their brothers and sisters and other relatives have been killed.
- Teacher Skogh: What do you think get them to participate in guerrilla wars except earning 100 dollars a day?
- Philip: They get food.
- Alva: Maybe they want revenge.
- Teacher Skogh: A moment, please! You have to wait for your turn.
- Alva: Maybe they want revenge because their parents have been killed in guerrilla wars.
- Anne: They want revenge.

In the text excerpt above the poor comprehender Anne answers without checking whether her answer can be connected with what they have read earlier. Teacher Skogh then applies the strategy of stating: "but before you said..." This is a way for the cognitive processes to start in the students' mind and the good comprehender Alva begin to build a chain of inference. The good comprehender Philip comments and also Anne. They are very engaged so the teacher has to remind them not to interrupt each other.

Discussion and Conclusions

In this study, structured talks (QtA) on-line changed the way that the teachers in the experimental groups and their students talked about expository texts.

During the regular lessons most of the open thinking and the cognitive efforts were done by the teachers in the experimental groups as well as in the control groups. When there was some thinking the teachers did not connect the students thinking to each other or to the text content to promote thinking.

Over the three years the communication patterns in the experimental groups were changed. In contrast to the teachers in the control groups, the teachers in the experimental groups were more attentive to where the students were in the construction process, prior knowledge, etc; and that affected the way they directed the text talk. During the regular lessons the teachers mostly asked factual questions, but the question types changed over the three years in the experimental groups. The number of purely factual questions decreased. Instead there was an increase in the number of inferences, half-open questions and specific factual questions. This change was not found in the control groups. The results are for the most part in line with Palinscar & Brown (1984), Beck et al., (1996) and Sandora et al.'s (1999).

The changing nature of the teacher questions and strategies, was probably a consequence of the teachers' reflections on their lessons through viewing tapes, reading transcripts, and discussing the effects of different question types and teacher strategies etc.

The changing nature of the teachers' questions and strategies produced a change in the students' answers and strategies. All students, both good and poor comprehenders, interacted more actively with the text when reading. They spontaneously utilized their prior knowledge, connecting it with the information in the text, and thus demonstrating that they had the potential to make inferences. Furthermore, all students showed signs of involvement. They contributed actively to the teacher's and their peers' comments in order to explore the ideas in the texts. Their answers demonstrated that they were able to discuss very complicated issues. They also questioned the author on several occasions. During the regular lessons, none of the students made comments about the text or questioned what was read.

The students in the control groups seldom got the opportunity to wrestle with text ideas themselves since their teachers (a) did not ask as many text-related questions as the teachers in the experimental groups did and (b) asked very few inference questions. However, when they asked such questions the students were eager to grapple with text ideas to be able to answer.

Dealing with a complex expository text in this matter, in the course of reading may be particularly effective for poor comprehenders. It may scaffold the students' comprehension processes by providing opportunities for them to reflect upon events and ideas, to scrutinize connections as they are encountered in the expository text being read (see also Beck et al., 1996 and Sandora et al.'s, 1999).

A limitation is that the critical issue has not been addressed: Did QtA promote reading comprehension? There was no significant difference in the average results of the pre- and post test which were both group-administered. In a forthcoming study the investigator will test each participant individually. Two texts will be used. The pretest will be given before implementing QtA and the posttest toward the end of the study. The texts will be counterbalanced by using each text as pretest for half the participants and the posttest for the other half. Each student will be asked to read the text and then the investigator will read each paragraph aloud and stop asking questions: factual questions as well as inference questions (see Beck et al., 1996). The students' answers will be recorded. However, the study has shown that there were dramatic changes in the teachers' way of questioning and in the type of students' answers in the experimental groups.

Pedagogical implications

When this longitudinal study started the students attended grade 4 and the majority of them had inadequate reading strategies. However, the study indicates that they had the potential to develop into good, active readers. This underlines the importance of starting to teach reading comprehension and asking inference and half-open questions already in grade 3.

It can be argued that structured text talks are time consuming, but by participating in structured text talks, students will probably internalize the relevant strategies and use them on their own. However, to be able to teach students reading comprehension, teachers need practice. This emphasizes the need to focus on the teaching of reading comprehension in teacher education: reading strategies, metacognitive strategies and structured text talks – not only involving fiction but also expository texts, etc. This is necessary, as we otherwise run the risk of educating students to be uncritical and passive readers of textbooks and newspapers.

Students who cannot meet the demands made on them also run the risk of failing both in school and later on in working life and society.

Acknowledgements:

The research was funded by Swedish Institute for Special Needs.

I am grateful to Professor Ingvar Lundberg for valuable advice and support during the research process, as well as for his helpful comments on the manuscript. I am also grateful to the SEN coordinator, Sten Gunnar Axelsson for valuable help.

Endnotes:

[1] The approach has earlier been used in another study by Reichenberg (2005) with 17 year old students. But in that study there were no control groups.

[2] Since the students were so young parental permission had to be given.

[3] Each student's ability to identify the written word had been tested at the beginning of the term. According to the SEN (special education need) coordinator's rating the poor readers were able to correctly identify the written word.

[4] DLS comprised four texts. The multiple choice format was used here as well. The tests were designed for grades 4-6.

[5] According to the original research design there were to be 36 videotaped sessions. However, one of the teachers, teacher Elf, became ill, after the end of the first year. Her substitute teacher could not take part in the study during the second year. However, in the third year, teacher Berg who shared the teaching with teacher Elf, led the text talk in her group. At one occasion during the third year the video camera did not work in teacher Berg's original group.

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APPENDIX 1

Table 1
Main categorizations of teacher questions. Discrepancies according to raters 1 and 2. Frequencies.

<i>Categorizations of teacher questions</i>	Number of deviations		
	N	Rater 1	Rater 2
Factual questions	110	1	3
Specific/factual questions	71	3	1
Check knowledge questions	130	7	8
Open-ended questions	14	3	1
Half-open questions	65	5	6
Inference questions	140	8	9
	530	27	28

Table 2
Main categorizations of student answers. Discrepancies according to raters 1 and 2. Frequencies.

<i>Categorizations of student answers</i>	Number of deviations		
	N	Rater 1	Rater 2
Directly from the text	112	2	3
Own words	75	2	1
Inferences	93	8	9
Reflections	109	8	10
Questions about words	6	-	-
	389	20	23

APPENDIX 2

Table 1
Teacher questions. Regular lessons in the experimental groups.
Frequencies. Year 1.

Teacher questions	Berg	Elf	Flod	Strom	Total
Factual questions	15	9	9	10	43
Specific/factual questions	3	4	-	-	7
Check knowledge	2	5	-	2	9
Open- ended questions	-	-	-	-	-
Half-open questions	-	-	-	-	-
Inference questions	-	-	1	-	1
	20	18	10	12	

Table 2
Teacher questions. Control groups. Teacher1(teacher 2) . Frequencies. Year 1.

Teacher questions	Lesson 1	Lesson 2	Lesson 3	Total
Factual	5 (1)	5 (1)	1 (1)	14
Specific/factual	-	- (-)	- (-)	-
Check knowledge	11 (4)	5 (2)	7 (2)	31
Open-ended questions	-	2 (-)	- (-)	2
Half-open questions	-	3 (3)	1 (-)	7
Inference questions	2 (1)	1 (-)	5 (2)	11
	18 (6)	16 (6)	14 (5)	

Table 3
Teacher questions. QtA lessons 1 and (2) Frequencies. Year 1.

Teacher questions	Berg	Elf	Flod	Strom	Total
Factual	7 (5)	2 (3)	4 (2)	4 (-)	27
Specific/factual	5 (6)	4 (6)	2 (4)	- (6)	33
Check knowledge	5 (5)	2 (8)	5 (10)	6 (9)	50
Open-ended questions	- (-)	1 (-)	- (1)	- (-)	2
Half-open questions	6 (1)	7 (5)	4 (1)	1 (-)	25
Inference questions	6 (6)	3 (6)	4 (5)	5 (13)	48
	29(23)	19(28)	19 (23)	16(28)	

Table 4
Students' answers. Regular lessons in the experimental groups.
Frequencies. Year 1.

Students' answers	Berg	Elf	Flod	Strom	Total
Directly from the text	15	11	9	8	43
Own words	2	2	-	1	5
Inference	-	-	1	-	1
Reflection	1		-	1	2
Questions about the meaning of words		1	-	-	1
	18	14	10	10	

Table 5
Students' answers. QtA lessons 1 and (2). Frequencies. Year 1.

Students' answers	Berg	Elf	Flod	Strom	Total
Directly from the text	5 (3)	3 (8)	5 (1)	3 (2)	30
Own words	4 (6)	3 (2)	3 (4)	1 (3)	26
Inferences	3 (5)	2 (3)	1 (5)	7 (8)	34
Reflections	6 (2)	9 (4)	3 (4)	2 (3)	33
Questions about the meaning of words	1 (-)	1 (-)	- (-)	- (-)	2
	19(16)	18(17)	12(14)	13(16)	

Table 6
Students' answers. Control groups. Teacher 1 (teacher 2). Frequencies. Year 1.

Students' answers	Lesson 1	Lesson 2	Lesson 3	Total
Directly from the text	5 (1)	2 (3)	1 (1)	13
Own words	2 (-)	2 (-)	1 (-)	5
Inferences	1 (1)	- (-)	3 (-)	5
Reflections	1 (-)	3 (4)	4 (-)	12
Questions about the meaning of words	2 (-)	- (-)	- (-)	2
	11 (2)	7(7)	9 (1)	

Table 7**Teacher questions. Year 2. Experimental groups. Frequencies.**

Teacher questions	Berg	Elf	Flod	Strom	Total
Factual questions	2	-	1	1	4
Specific/factual questions	6	-	5	1	12
Check knowledge	3	-	2	5	10
Open- ended questions	-	-	-	-	-
Half-open questions	2	-	-	2	4
Inference questions	4	-	4	13	21
	17		12	22	

Table 8**Teachers questions. Year 2. Control groups.****Frequencies.**

Teacher questions	Stone	Hill	Total
Factual	-	1	1
Specific/factual	-	-	-
Check knowledge	-	1	1
Open-ended questions	4	-	4
Half-open questions	2	3	5
Inference questions	-	-	-
	6	5	

Table 9**Teacher questions. Year 3. Experimental groups. Frequencies. Text 1 and (2).**

Teacher questions	Berg	Elf (Berg)	Flod	Strom	Total
Factual questions	2	4 (1)	2 (4)	1 (1)	15
Specific/factual questions	4	3(4)	4 (3)	- (1)	19
Check knowledge	5	5 (8)	2 (1)	2 (2)	25
Open- ended questions	-	- (1)	-	- (1)	2
Half-open questions	1	1(3)	2 (4)	1 (3)	15
Inference questions	8	9 (9)	2 (7)	10 (11)	56
	20	22(26)	12(19)	14 (19)	

Table 10
Teacher questions. Year 3. Control groups.
Frequencies Text 1 and (2).

Teacher questions	Stone	Hill	Total
Factual questions	5	1 -	6
Specific/factual questions	-	-	-
Check knowledge	2	1 (1)	4
Open- ended questions	- (1)	- (3)	4
Half-open questions	1 (2)	3 (3)	9
Inference questions	1	- (2)	3
	9(3)	5(9)	

Table 11
Students' answers. Year 2. Experimental groups. Frequencies.

Students' answers	Berg	Elf	Flod	Strom	Total
Directly from the text	3		3	5	11
Own words	4		5	4	13
Inferences	1		3	4	8
Reflections	3		1	2	6
Questions about the meaning of words	-		-	-	-
	11	-	12	15	

Table 12
Students' answers. Year 2. Control groups.
Frequencies.

Students' answers	Stone	Hill	Total
Directly from the text		1	1
Own words		1	1
Inferences		-	-
Reflections	1	2	3
Questions about the meaning of words		-	-
	1	4	

Table 13**Students' answers. Year 3. Experimental groups. Frequencies. Text 1 and (2).**

Students' answers	Berg	Elf	Flod	Strom	Total
Directly from the text	-	4 (3)	1 (4)	1-	13
Own words	4	5 (3)	4 (3)	3 (2)	24
Inferences	4	6 (7)	2 (7)	6(8)	38
Reflections	4	3 (7)	6 (3)	7 (11)	41
Questions about the meaning of words	-		- (1)	-	1
	12	18(18)	13(18)	17(21)	

Table 14**Students' answers. Year 3. Control groups. Frequencies.****Text 1 and (2)**

Students' answers	Stone	Hill	Total
Directly from the text	1	-	1
Own words	1	-	1
Inferences	- (1)	1 (5)	7
Reflections	3 (3)	2 (4)	12
Questions about the meaning of words	-	-	-
	5(4)	3(9)	