

# Master thesis

“Matching teacher feedback and student perceptions  
in a collaborative learning environment”

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Title page

*Title master thesis*      Matching teacher feedback and student perceptions in a collaborative learning environment

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### Abstract

Teacher feedback is an important aspect of social learning. However, the match between teacher feedback and students' perceptions of this teacher feedback is scarcely studied. This study aims to fulfill this need by answering the following research question: What is the relationship between the actual oral teacher feedback and the students' perceptions of the actual oral teacher feedback during collaborative learning? Participants were 77 students and 2 teachers in Dutch university preparatory secondary history education participating in collaborative learning. Self-report questionnaires and transcripts of collaborative learning sequences were analysed. No match was found between actual teacher feedback quality and students' perceptions of teacher feedback quality. Students' characteristics partly influenced the students' perceptions of teacher feedback quality.

## Introduction

One fundamental aspect of contemporary views on educational practice is that “classroom learning and knowledge acquisition are highly social processes” (Gettinger & Stoiber, 1999, p. 936). This has been reflected by a great increase in the use of cooperative and collaborative learning methods in the last twenty years (Webb, Farivar, & Mastergeorge, 2002; Webb, Troper, & Fall, 1995). Research has presented substantial evidence of the benefits of these ways of learning for students from all levels and years of schooling (Gillies, 2008). The driving force behind student learning is what teachers and students do in classrooms (Black & William, 1998). Among other things, good teachers monitor their students’ learning and provide formative feedback in order to improve their students’ learning and task performance.

Teacher feedback is, as a social act, an important aspect of the social learning environment (Lee, 2008) and according to Hattie and Timperley (2007, p. 81) it’s “one of the most powerful influences on learning and achievement”. Only viewing the teacher feedback as the transfer of teacher information to the student however ignores the way teacher feedback interacts with students’ motivations and beliefs (Nicol & Macfarlane-Dick, 2006). Hence, the influence of teacher feedback on student learning does not seem to be direct.

The students’ perspectives of the learning environment mediate the influence which the teacher feedback has on the learning and the study behaviour of the students (Entwistle & Tait, 1990). Students’ perceptions of the teacher feedback are actually the product of the interaction between their own personal characteristics (Ilgen, Fisher, & Taylor, 1979) and environment-related characteristics (Luyten, Lowyck, & Tuerlinckx, 2001). These characteristics influence the way students perceive and interpret the learning environment (e.g., Könings, 2007). Student characteristics that can influence student perceptions on teacher feedback are for example, students’ self-efficacy levels and their regulation strategies (e.g., Hattie & Timperley, 2007; Kulhavy & Stock, 1989; Lee, 2008).

According to research by Chanock (2000) students often find teachers’ comments difficult to interpret and students’ perceptions often do not coincide with the way the comments were intended by their teachers. Students’ perceptions of teacher feedback also do not necessarily correspond with the actual received teacher feedback (Montgomery & Baker, 2007). As feedback comments are only effective when they address certain problems or concerns and thus connect to the students (Higgins, 2000), and students actually make use of them (Higgins, Hartley, & Skelton, 2002) a mismatch can have considerable implications for student learning and the effectiveness of feedback.

Research aimed at mismatching perceptions often concentrates on the relationship between student and teacher perceptions or student perceptions and student preferences of teacher feedback (e.g., Carless, 2006; Chanock, 2000; Maclellan, 2001; Pat-El, Tillema, Vedder, & Segers, under review; Raviv, Raviv & Reisel, 1990; Van de Watering, Gijbels, Dochy, & Van der Rijt, 2008) instead of focusing on the alignment between students’ perceptions and the actual feedback practice.

Several researchers (e.g., Goldstein, 2006; Matsuda, 1999; Montgomery & Baker, 2007) have asked therefore for more research that compares students’ perceptions of feedback with the actual teacher feedback in order to investigate the classroom’s complex relationships, which affect the feedback practice. This is needed as the role of teacher feedback during collaborative learning is still somewhat

neglected in scientific research (Gillies, 2004) and most research on collaborative learning is focused on peer feedback. According to Lee (2008) as student reactions and actual teacher feedback in specific contexts are weakly linked, researchers need to investigate teacher feedback with reference to learner characteristics.

This current study will aim to do just that, by investigate the (mis)alignment of the actual teacher feedback practice and the students' perceptions of the teacher feedback in a collaborative learning environment, while focusing on oral feedback comments and taking into account the mediating role students' characteristics play. At the heart of this study lies the following question: What is the relationship between the actual oral teacher feedback and the students' perceptions of the actual oral teacher feedback during collaborative learning?

The composition of this master thesis is as follows. A theoretical framework is introduced on which the concepts presented in this research are based, and the various research questions are presented. The research method describes the design and the procedure of the research study as well as the participants, the various instruments that are used and the methods of data analysis. The third chapter presents the research results for each research question. In the discussion following the result section, the results are interpreted and linked with other research findings, and the methodological limitations and implications of the research study are discussed. Finally a reference list and several Appendices are presented.

### *Mismatching perceptions*

Research by Elen and Lowyck (1998) showed that students' subjective experiences of a learning environment and its aspects often do not correspond with the objective way the designers or teachers intended that specific learning environment to be. According to Norman (1986, p. 45) the students' perceptions "mediate between psychological and physical representations" of the activity (e.g., a learning task). Norman (1986) notes that perceiving the physical activity is the first phase in which the students assess the actual effect of the action. He also states that the user will construct a conceptual model of the task or system, which needs to be compatible with the designer's underlying conceptual model for that specific task. A mismatch between teacher and student perceptions could very well lead to the misunderstanding and misinterpretation of the information by students (e.g., Chanock, 2000; Norman, 1986).

In their research, which compared perspectives of teachers and students, Raviv et al. (1990) found that teachers' and their classes' perceptions differed when evaluating the actual classroom environment. The teachers in their research tended to perceive the actual aspects of the classroom environment (e.g., teacher support and rule clarity) more favourably than did their students. Pat-El et al. (under review) also discovered a considerable mismatch between the teachers' and students' perceptions that is, the teachers experienced the different variables of assessment for learning more positively than did their students. The misalignment they found between for example, the perceptions on teacher monitoring that exist of perceptions of the frequency and form of teacher feedback and perceptions of the facilitation of self-monitoring, could be contributed partly to the student's language proficiency.

Research by Maclellan (2001) found that while a majority of the staff members frequently experienced feedback as helpful and beneficial to learning, understanding assessment, and prompting discussion with the tutor, a student majority found this to be never or only sometimes the case. Teachers in a study by Carless

(2006) perceived their feedback as being detailed and improving student learning, while only a very small amount of students thought the same way.

Although researching teacher's intentions is important, these however do not necessarily coincide with the actual teacher feedback practice as can be observed in the classroom. Montgomery and Baker (2007) found that, although the perceptions of students and teachers in their research did coordinate well, these perceptions did not correspond with the actual teacher feedback performance. Lee (2008) observed that students had difficulty understanding all of the written teacher feedback they received and this is important as, according to Higgins et al. (2002, p. 53) the students are "active makers and mediators of meaning within particular learning contexts".

Vermetten, Vermunt, and Lodewijks (2002) have shown that students have a tendency to learn according to their own learning preferences and learning habits. When a learning environment and hence also teacher feedback as an aspect of that learning environment is perceived as a poor fit to the students' personal learning needs this will have negative consequences for the effectiveness of learning and learning outcomes (Könings, 2007; Norman, 1986). Although this thesis aims at investigating the students' perceptions of the actual teacher feedback and the actual oral feedback they received in order to discover a possible mismatch between these two in a collaborative learning environment, students' preferences are also taken into account.

### *Collaborative learning*

One fundamental aspect of contemporary views on educational practice is that "classroom learning and knowledge acquisition are highly social processes" (Gettinger & Stoiber, 1999, p. 936). This has been reflected by a great increase in the use of cooperative and collaborative learning methods in the last twenty years (Webb et al., 2002; Webb et al., 1995). Research has presented substantial evidence of the benefits of these ways of learning for students from all levels and years of schooling (Gillies, 2008).

For the type of learning that is the focus of this thesis two terms are used in research namely, collaborative learning and cooperative learning. Following Cohen's (1994) broad definition, this thesis defines these types of learning as "students working together in a group small enough that everyone can participate on a collective task that has been clearly assigned" (p. 3). Although the two terms could be used interchangeably in this thesis the choice is made to use only the term 'collaborative learning', even if the original source uses the term cooperative learning. The reason for this is that according to Roschelle and Teasley (1995, p. 70) collaborative learning is seen as "the mutual engagement of participants in a coordinated effort to solve the problem together", while cooperative learning "is accomplished by the division of labour among participants, as an activity where each person is responsible for a portion of the problem solving". In this thesis however, the focus lies more on shared instead of divided work in small groups, although students may ultimately choose to divide the work amongst themselves in order to solve the problem.

Collaborative learning presents the students with the opportunity to work together in constructing new understandings (Webb & Palinscar, 1996) and thus learning from each other (e.g., while solving problem tasks). Students no longer are passive recipients of learning content offered by the teacher, but are mediators who actively interpret information and construct their own knowledge by relating the new information with their prior knowledge (Gettinger & Stoiber, 1999), thus filling in

gaps in current understanding and eliminating misconceptions (Wittrock, 1990). Through giving help and explanations to others, and receiving help from the other students in the group, students can benefit from collaborative learning (Webb & Palinscar, 1996; Webb et al., 1995).

Although collaborative learning offers students the opportunity to develop their learning through a social process of which they can benefit it is not at all apparent that students' learning and task performance will actually improve, since according to Saab, Van Joolingen, and Van Hout-Wolters (2007, p. 74) "it is not self-evident that learners know how to collaborate constructively". Teachers' actions can affect the quality of groups' problem-solving processes during collaborative learning (Oortwijn, Boekaerts, Vedder, & Strijbos, 2008) and teachers' instructions on how students can effectively act during collaborative learning will positively influence the collaborative learning process (Black & William, 1998; Mercer, 1996).

Important aspects of classroom instruction are the monitoring of performance and the presence of informative teacher feedback (Gettinger & Stoiber, 1999). According to Gillies and Boyle (2010) teacher feedback is a very important aspect of student learning, and Pellegrino, Chudowski, and Glaser (2001) consider teacher feedback to be essential for directing, testing, challenging and giving new direction to the student's learning in each situation and each educational method. Teacher feedback is thus, as a social act, an important aspect of the social learning environment (Lee, 2008).

As teacher feedback is part of instruction and teacher-student interaction and thus seems important for effective collaborative learning, this study will focus on teacher feedback in a collaborative learning environment, taking into account that "student reactions to teacher feedback are influenced by the instructional context in which feedback is delivered" (Lee, 2008, p. 146). As Prosser and Millar (1989) found variation in students' perceptions of the classroom environment within any one class and group of students, this study will also take a closer look at the differences in students' perceptions of teacher feedback between the different classes in this study.

### *Type and effectiveness of teacher feedback*

It's an important part of the teachers' roles in education to provide their students with feedback (Irons, 2008). The teacher is the agent who provides the students with feedback regarding aspects of their performance and understanding (Hattie & Timperley, 2007). This feedback can take many forms and serve several goals. For one, the feedback can be aimed at the student's performance on summative tests. These summative assessments gather mostly numeral information over longer periods in order to assess student performance (Dochy, Segers, & De Rijdt, 2002) and their goal is to offer certification or diagnostic evaluation. It assesses how well the student achieved on the test (Irons, 2008).

In this thesis however the interest lies with formative assessment, which gives regular non-numeral information feedback about the students' or the groups' learning achievements, their strong and weak points and suggests possible improvements during the ongoing learning process (Dochy et al., 2002). Formative feedback should thus be given timely (Dochy et al., 2002), as students can then improve their learning during for example their collaborative learning. Following Shute (2008, p. 153) this thesis defines formative feedback as "information communicated to the learner that is intended to modify his or her thinking or behaviour to improve learning". In order to improve learning and performance, feedback should contain information about specific qualities of the student's or group's work or behaviour, and should give



pointers as to what students can do to improve (Black & William, 1998). Formative feedback thus contains information that fares beyond the accuracy of particular responses or behaviours and is labelled specific, elaborated feedback (Shute, 2008).

It is important to notice however that according to Shute (2008) formative feedback that serves a corrective function will in its most basic form contain a verification of an answer and provide additional information that is, an elaboration. Shute (2008) introduced a continuum with verification feedback on the one hand and elaboration feedback on the other. She lists several types of elaborated feedback for example, feedback that a) gives information about errors or misconceptions that is, information on why an answer is correct or incorrect, b) incorporates re-teaching material, c) offers guidance in the form of strategic hints or worked out examples, and d) combines verification feedback with for example, strategic hints that show the students how to proceed.

Kluger and DeNisi (1996) like Webb et al. (1995) state that in order to be effective and improve performance, feedback needs contain an elaboration that is, additional information often in the form of an explanation. This feedback could have different functions as feedback can be directive or facilitative (Black & William, 1998). Following Black and William this thesis considers directive feedback to offer specific instruction on student's actions, while facilitative feedback offers suggestions in order to guide the student.

According to Hattie and Timperley (2007) and Sadler (1989) effective feedback should also inform the group or individual about the goals or standards that need to be attained, the progress the group or the individual has to make in accordance with these goals, and the appropriate actions that lead to improvement, development and closure of the gap between the student's or the group's current position and the goal. A predefined goal for learning is thus needed in order to enable the students to alter their actions and close the gap between current and intended learning (Earley, Northcraft, Lee, & Lituchy, 1990).

Verification feedback that contains only a final answer is considered by Webb et al. (2002, p. 14) to be "non-elaborated". This non-elaborated form of feedback is considered to be less beneficial for student learning, since it seems likely that the students receiving this feedback will not be able to use the information in order to correct their misconceptions or improve their understanding (Webb et al., 2002).

What is effective formative feedback however also seems to rely, according to Strijbos, Narciss, and Dünnebier (2010), on the actual state of learning. They state that the presence and extent of the gap between the actual and intended state of learning, influences the nature of the feedback message that is, the amount of detailed information and elaboration within the feedback message. Feedback that for example, only offers correctness of a response or certain behaviour, and is thus very general and concise, may be effective in a learning situation where a student has in fact reached the intended goals (Strijbos et al., 2010).

Although elaborated feedback would seem to be the most effective type for improving student learning, this is not necessarily so as Strijbos et al. (2010) found no correlation between perceptions of feedback and performance. They also point out that only some studies (e.g., Hattie & Timperley, 2007; Mory, 2004; Shute, 2008) support the notion that feedback, which is elaborated and specific has a more positive affect on performance than general and concise feedback.

Lee (2008) found however that both low and high proficiency students preferred the written teacher feedback they received to include more specific written comments and error feedback. Students of lower proficiency were less inclined to

receive error feedback on any occasion (Lee, 2008) and students in a study by Higgins et al. (2002) were dissatisfied with the teacher's feedback comments lacking specific advice to improve. These results regard more the students' preferences instead of their perceptions of teacher feedback however.

A study by Arndt (1993) found that teachers' comments in the form of clues were appreciated more by students. These teacher comments were more easily remembered by students than teacher comments which only contained the correct answer (Arndt, 1993). Straub (1997) showed that students' perceptions of teacher feedback, which provides elaborated and specific advice, are more positive than of teacher feedback that is short and evaluative. The students liked teacher comments that provided advice, explanations and helpful criticism that guided revision and helped them to improve their performance (Straub, 1997). Strijbos et al. (2010) found that students receiving elaborated and specific written teacher feedback from a high competent peer, perceived this feedback to be more adequate (i.e., useful, fair and acceptable) than students who received either general concise feedback from a high or low competent peer. The student's perception thus determines the effectiveness of the teacher feedback and consequently the amount of student learning that will take place (Entwistle, 1991).

The properties attributed to elaborated, specific feedback, at least in theory, seem to fit well with the goals and characteristics of a collaborative learning environment. Elaborated, specific feedback that offers the students information on more than just verification of their collaborative learning behaviour and problem solving could lead the students to fill in gaps in their current understanding, eliminate misconceptions, and alter collaborative learning behaviour in order to reach their learning goals. This study will investigate therefore the quantity and quality of feedback offered by the teacher (as a high competent person), where the quality of feedback is designated as the amount of elaboration or specificity of the feedback (i.e., the type of teacher feedback).

The feedback referred to in this thesis concerns comments on students' collaborative learning behaviour and students' (unfinished) collaborative learning assignments. It encompasses oral comments containing a verification and possibly a form of elaboration on the students' ongoing learning processes and their (unfinished) products. According to Gibbs, Simpson, and Macdonald (2003) students have more difficulty recognizing oral comments as feedback. Written feedback comments, as permanent records are more easily recognized and last longer (Gibbs et al., 2003). This needs to be taken into account as it could possibly influence the eventual mismatch between students' perceptions and the actual oral teacher feedback. As there are more factors that can influence the impact of the teacher feedback message some of these are considered next.

#### *Impact of teacher feedback on the collaborative learning process*

Research by Chiu (2004), Dekker and Elshout-Mohr (2004), and Ding, Li, Piccolo, and Kulm (2007) shows another factor that needs consideration while studying teacher feedback practice. Dekker and Elshout-Mohr (2004, p. 39) state it's "practically impossible for a teacher in a classroom situation to keep track of each group's work", and teacher interventions can therefore "interfere with the ongoing thinking and learning processes of the students". When offering feedback, the teacher makes an intervention in the collaborative learning of the students. According to Chiu (2004) the effectiveness of a teacher feedback intervention depends on how well the intervention is adapted to and coincides with the students' needs. Hence, evaluation

by the teacher of the students' group work is needed. The students themselves can also show the teacher their needs by asking questions. Although keeping track of the different groups' thinking and learning processes would be asking too much of this specific research, this research will take into account who initiates the feedback intervention; the teacher or the students.

As teacher feedback is delivered in collaborative learning situations, the individual student's perception of the feedback as being either relevant to the whole group, other group members or to oneself, may confound the feedback message (Hattie & Timperley, 2007). Nadler (1979) argues that in case a student perceives the feedback to be relating to the whole group or to other members of the group, the feedback is likely to be either diluted or to be perceived as irrelevant to the performance of that individual student. The question about who is perceived to be the recipient of the feedback message will also be investigated in this study.

As Luyten et al. (2001) state, the student's perspective of the learning environment (and hence also the student's perspective on teacher feedback as an aspect of that learning environment) is the product of the interaction between a) internal elements that is, the student's learning-related characteristics, and b) external elements that is, environment-related characteristics. According to Lee (2008) the teacher's personality and the teacher-student interaction during the feedback process both influence the student's perception of the feedback. The main focus of this study however will be on investigating the possible mismatch between student perception and actual teacher feedback practice. Only considering teacher feedback as the transfer of teacher information to the student however ignores the way teacher feedback interacts with students' motivations and beliefs (Nicol & Macfarlane-Dick, 2006).

### *Student perceptions and characteristics*

According to Gettinger and Stoiber (1999) students should be recognized as active recipients of the information offered by the teacher, since they interpret the academic content, try to make sense of this information, and relate the new information to their prior knowledge. The way students perceive the information (i.e., the feedback) from their teacher will therefore also determine which learning activities they will undertake and hence also influences the quality of the students' learning outcomes (Entwistle & Tait, 1990; Könings, 2007).

According to Könings (2007) the origin of students' perceptions is of great importance if one is to get a grip on the content of their perceptions. Conceptions students have (e.g., about learning) are the origins of student perception and colour their view of reality, and are thus of great influence on the perceptions students have (Könings, 2007). According to Könings (2007) conceptions are student characteristics that help students to interpret the received information in their own personal way. Because students have their own individual conceptions, there is thought to be great variability in the way students perceive, among other things, teacher feedback. Belief is also a term often used when signifying conceptions (Kember, 1997). However, in this thesis the focus will not lie on the level of conceptions or beliefs. This thesis will investigate the students' perceptions of feedback and the students' characteristics at that specific moment in time.

Ilgén et al. (1979) stated that the recipients' perceptions of the teacher feedback depend, among other things, on their own personal characteristics. Gettinger and Stoiber (1999) name comprehension, motivation, learning strategies, and metacognitive processes as examples of student characteristics. They consider these

characteristics as processes in which the student is the active mediator of teacher instruction. Other student characteristics that can influence students' perceptions of teacher feedback are students' self-efficacy levels and regulation strategies (e.g., Hattie & Timperley, 2007; Kulhavy & Stock, 1989; Lee, 2008). According to Könings (2007) these characteristics influence the way students perceive and interpret the learning environment.

Student characteristics however, are traits that are not considered to be stable (Könings, 2007). In their research Vermetten, Lodewijks, and Vermunt (1999) show that in different learning environments or contexts, similar students apply different learning strategies. Boekaerts (2002) states that motivational beliefs as well as cognitive strategies are also no longer considered stable traits, but are seen as domain-specific traits. According to Boekaerts (2002) these motivational beliefs do however provide the context within which a current learning environment is perceived or appraised by students, and Nicol and Macfarlane-Dick (2006, p. 201) state that "feedback both regulates and is regulated by motivational beliefs".

Struyven, Dochy, and Janssens (2005) found that while students' learning approaches are significantly influenced by their perceptions on aspects of the learning environment like evaluation and assessment, the reverse scenario is also true; approaches to learning influence the way students perceive evaluation and assessment. The relationship between students' learning-related characteristics and students' perceptions is therefore a reciprocal causal relationship (Könings, 2007). Thus, in order to study the perceptions of teacher feedback as an aspect of the learning environment this study will also consider the influence of student characteristics that is, motivational goal orientation (i.e., intrinsic and extrinsic goal orientation), self-efficacy, and two self-regulatory strategies (i.e., help seeking and peer learning) on students' perceptions of teacher feedback.

### *Motivational goal orientation*

There are multiple motivational perspectives that co-exist in current educational research. The specific motivational theory that best fits the various aspects this thesis aims to investigate is the achievement goal theory. According to Boekaerts, Van Nuland, and Martens (2010) this perspective depicts motivation as "an integrated pattern of beliefs that leads to different ways of approaching, engaging in, and responding to achievement situations" (p. 8). The two most relevant goal orientations are called mastery and performance goal orientation. In the mastery orientation "increasing one's competence, knowledge, and skills" is considered the reason to engage in a learning task, while a student with a performance orientation aims at "demonstrating one's ability" by engaging in a learning task (Boekaerts et al., 2010, p. 8-9). The student's motivation can thus initiate certain student behaviour and learning. Most importantly, the student's motivation will constitute a certain manner of perceiving and interpreting the collaborative learning environment.

Research shows a positive relationship between a mastery goal orientation and the intrinsic motivation of the student, and also found performance goal oriented students more focused on the outcomes of their learning (Boekaerts et al., 2010). As students with a performance goal orientation aim at demonstrating their ability to others (Boekaerts et al., 2010), these students are likely to have an extrinsically motivated orientation or extrinsic interest in learning. Extrinsically motivated students have the desire to engage in learning (i.e., demonstrating one's ability) in order to garner consequences that are external to the task (e.g., receiving praise, rewards and favourable judgements in comparison to others, or avoiding punishment) (Ryan &

Pintrich, 1997). According to Könings (2007, p. 28) these students are fixated on “getting feedback and passing the course”.

Students who have a personal motivational orientation combined with an intrinsic learning interest want to learn in order to improve themselves and their learning and they therefore welcome challenging tasks (Könings, 2007). These students want to gain new competencies; new knowledge, skills, and attitudes. As it is the goal of a formative learning environment to stimulate students' learning improvements through the use of regular, formative feedback in order to modify the students' thinking or behaviour, one could hypothesize that students who are intrinsically motivated will perceive the feedback as a positive and useful aspect of the learning environment. This seems a plausible assumption, since the goal of the feedback corresponds with their habitual motivational learning orientation. And, as Könings (2007) says, students only make use of those specific aspects of the learning environment that they find suitable and are a good fit with their personal learning orientation.

Könings (2007) discovered that students who had a more “personally interested learning orientation”, and were thus more intrinsically motivated to learn, had higher that is, more positive perceptions of their learning environment and considered their learning environment to be more powerful. Of course, not only students with a mastery or learning orientation can perceive their learning environment as positive or powerful. Noels, Clément, and Pelletier (1999) found that students' perceptions of the teacher as being informative (i.e., providing relevant and useful feedback) were related to the intrinsic motivations of students. If the students perceived the teacher to be less informative, their intrinsic motivation was lower (Noels et al., 1999).

According to Ryan and Pintrich (1997) students' perceptions of their own abilities are differentiated among varying subject areas. This could also be true for the students' perceptions of their own characteristics such as, motivational goal orientation. One can imagine that a student is more highly motivated for one course than for another for example, because the student is more interested in the course content, has a preference for the specific teaching method used in that course, or the student's relationship with the specific teacher is better.

### *Self-efficacy*

A student's self-efficacy can also mediate the student's perception of teacher feedback (Hattie & Timperley, 2007; Lee, 2008). Self-efficacy is “the learner's perception of how well he or she can perform the learning tasks to achieve his or her goals” (Mory, 2004, p. 766). Self-efficacy is about perceiving one's own ability and the expectancy one has of being capable of succeeding on for example, a collaborative learning task (Stipek, 1996). Pintrich and De Groot (1990) also include confidence in their description of self-efficacy. Pintrich and De Groot (1990) found that students who perceived themselves to be capable reported the use of cognitive and metacognitive strategies (e.g., self-regulation) more often and persisted more at tasks that were found to be difficult or uninteresting.

Looking at the influence of self-efficacy beliefs on the perception of feedback, Lee's study (2008) notices that students with a high proficiency level (in a course on second language writing) were highly interested in error feedback and a large group wanted a teacher response on all their errors. The lower proficiency students were less eager to receive error feedback and seemed less interested in teacher feedback altogether. When comparing students high in proficiency to students low in

proficiency Lee (2008) found that higher proficiency students had a more positive disposition towards their own comprehension of the teacher feedback and the usefulness of the teacher feedback.

Hattie and Timperley (2007) support this notion as they state that the students' confidence levels about the correctness of their performance affect the students' receptivity to feedback and their seeking of feedback. If students are certain of their response or performance and the teacher feedback confirms the correctness of their response, little attention is paid to the teacher feedback (Kulhavy & Stock, 1989). They found that the same counts for a wrong response when the student's response certainty is low, and that the largest feedback effect exists when certainty is high and the response appears to be wrong (Kulhavy & Stock, 1989). This may not necessarily influence the students' perceptions of the teacher feedback, but this study will investigate that by looking for a relationship between the students' self-efficacy and their perceptions of feedback.

#### *Regulatory strategies: help seeking and peer learning*

Students can either take the regulation of their learning process in their own hands or rely on the teacher for external regulation (Vermunt, 1998). Dekker and Elshout-Mohr (2004) state that teachers perform regulating activities during collaborative learning, when they intervene in group learning and ask students to explain and justify their thinking, their strategies, etc. When the task proves to be too challenging for a group, the teacher can offer the students hints, can scaffold their learning, and can offer help when the students fail to regulate their collaborative group interactions (Dekker & Elshout-Mohr, 2004). Students who have trouble regulating either their group interaction process or their learning process, seem to have a greater need of a teacher feedback intervention.

According to Boekaerts and Corno (2005) students who self-regulate their learning are, among theorists, generally considered to be “engaged actively and constructively in a process of meaning generation and that they adapt their thoughts, feelings, and actions as needed to affect the own learning and motivation” (p. 201). Self-regulatory learners have and take initiative in their own learning processes (Könings, 2007) in order to accomplish their goals. According to Hattie and Timperley (2007, p. 93) self-regulation implies “autonomy, self-control, self-direction, and self-discipline”.

In her research Könings (2007) found evidence that a lack of regulation strategies (mind, not external regulation strategies) relates to a less positive perception of the learning environment. If however, an external regulation strategy was used, the student had a positive perception of certain aspects of the learning environment for example, interaction and clarity of goals. Puustinen (1998) argues that a lessened prior knowledge in students would also make them less able to self-regulate their learning, and that these students therefore need more support and guidance from the teacher. Hattie and Timperley (2007) add that less effective learners not only seldom seek feedback, but also rarely effectively incorporate the teacher feedback in order to develop their learning.

That students can benefit from both giving help to and receiving help from their peers (Webb et al., 1995) is the very point of a collaborative learning environment. Seeking help from the teacher when needed is also important, but as Webb, Nemer, and Ing (2006) found, teachers seldom encourage their students to ask questions.

Next to help seeking, peer learning is also a regulatory strategy for controlling other resources besides cognition (Pintrich, Smith, Garcia, & McKeachie, 1993). As this study is set in a collaborative learning environment, it will be interesting to see if the student characteristics help seeking and peer learning, but also intrinsic and extrinsic goal orientation, and self-efficacy influence the way students perceive the teacher feedback. Teacher feedback that students perhaps sought themselves by asking the teacher questions.

### *Scientific relevance*

Although there are multiple studies that investigate student preferences and perceptions of feedback practice, Montgomery and Baker (2007) state that the student perceptions of feedback are rarely compared to the actual teacher feedback practice in the classroom. Their own research showed that students' and teachers' perceptions of teacher feedback did not correspond with the actual teacher feedback performance.

Research by Higgins et al. (2002) investigated the relationship between students' understandings of teacher feedback and the actual written teacher feedback students received. They found among other things that timely feedback is vital, that feedback needs to address and explain misconceptions in order to possibly improve student learning, and that the language used by feedback givers is not necessarily meaningful to students. Their research however was focused on written teacher feedback. Compared to oral teacher feedback, written teacher feedback has more often been subject to educational research (e.g., Carless, 2006; Higgins et al., 2002; Hyland & Hyland, 2001; Lee, 2008; Montgomery & Baker, 2007; Strijbos et al., 2010). The reason for this is perhaps more practical, since written feedback is made visible and is therefore more accessible to students. Gibbs et al. (2003) endorse this by saying that compared to written feedback comments students have more difficulty recognizing oral comments as feedback.

Research into mismatching perceptions often focuses on comparing student and teacher perceptions (e.g. Carless, 2006; Chanock, 2000; Maclellan, 2001; Pat-El et al., under review; Raviv et al., 1990). For example, Maclellan (2001), Carless (2006), and Pat-El et al. (under review) all found mismatches between student and teacher perceptions that is, when compared with their students the teachers had a more opportunistic view about various factors in the classroom environment, including teacher feedback. Other researchers focus more on students' preferences (e.g., Arndt, 1993; Straub, 1997) and the relationship between students' preferences and students' perceptions (e.g., Van de Watering et al., 2008).

In her research Könings (2007) investigates the connection between student characteristics and student perception, but she focuses on the perception of the entire learning environment and pays no attention to student perceptions of teacher feedback as an aspect of that learning environment. Aspects of the learning environment that are subject to ample research are students' perceptions of evaluation practices and assessment procedures (e.g., Scouller, 1998; Segers & Dochy, 2001; Struyven et al., 2005; Van de Watering et al., 2008).

The relationship between teacher feedback and student characteristics is often investigated, but is mostly directed at the influence feedback has on for example, students' self-perceptions (e.g., Stipek, 2002), intrinsic motivation (e.g., the meta-analysis by Deci, Koestner, & Ryan 1999; Koka & Hein, 2003), and goal orientation (Shute, 2008). The influence of students' characteristics on students' perceptions and thus the effectiveness of teacher feedback has not received much attention however, and will therefore be investigated in this research study.

In research on effective classroom collaboration, the role of the students and the benefits they derive from social interaction have a prominent place (e.g., Webb et al., 2008; Gillies, 2004), while less is known about the role of the teacher in promoting and facilitating effective collaborative learning (Gillies & Boyle, 2008). Although the attention in present day research shifts somewhat to the role of the teacher, teacher discourse, and teacher instructional practices in a collaborative learning environment (e.g., Gillies & Boyle, 2008; Webb, 2009; Webb et al., 2006), the role of teacher feedback during collaborative learning, is still somewhat neglected (Gillies, 2004).

Several researchers however investigate the influence of teacher interventions during collaborative learning (e.g., Dekker & Elshout-Mohr, 2004; Ding et al., 2007). Dekker and Elshout-Mohr (2004) and found that, while comparing two interventions aimed at either the students' interactions or the mathematical content of tasks, interventions aimed at students' interactions affected students' learning outcomes more. Also, the focus of research into collaborative learning often lies with peer feedback instead of teacher feedback. Ross (1995) for example investigated the effects of a feedback instrument on student helping behaviour during collaborative learning. This instrument exists of a coded transcript of the specific collaborative group's work, and is offered to the students of that group in order to improve their help seeking and help giving behaviour. Ross (1995) found that the used feedback strategy increased students' help seeking and help giving behaviours and attitudes towards peers.

The research presented in this thesis aims at investigating the alignment between students' perceptions of actual oral teacher feedback and the actual teacher feedback practice in a collaborative learning environment. The research also takes into consideration the students' characteristics, which seem to mediate the students' perception.

### *The present thesis*

Although "a learning environment is never optimal for all students" (Boekaerts et al., 2010, p. 20) this thesis investigates how actual oral teacher feedback relates to students' perceptions of oral teacher feedback. This research could offer valuable insight in how these variables that are present in the learning environment correlate with one another. By taking student characteristics into account, this research accounts for the diversity that exists between students in present day classrooms and collaborative learning groups.

While observing the quantity and quality of the orally presented teacher feedback, it will also be taken into account who initiates the feedback intervention, since this may influence the nature of the feedback intervention. The presented research combines several aspects of the learning environment that have not been subject to prior research in this specific joint format before. This study examines how actual oral teacher feedback received during collaborative group work and student characteristics relate to student perceptions of the teacher feedback. The main question this thesis addresses is:

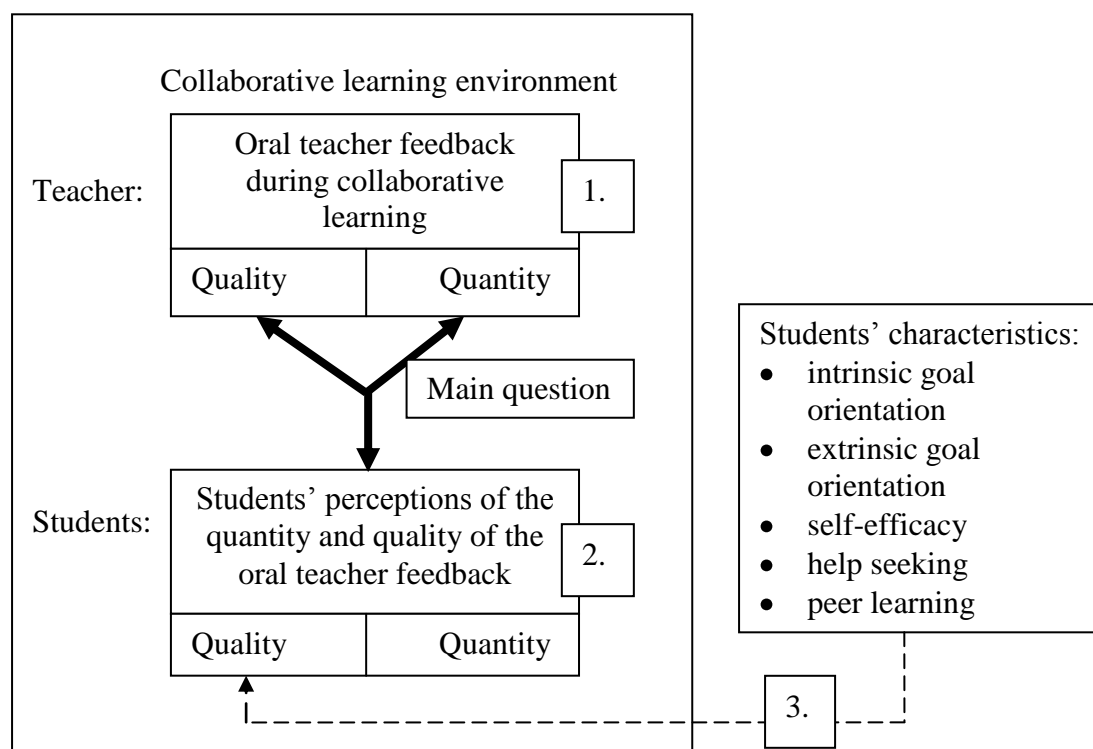
*What is the relationship between the actual oral teacher feedback and the students' perceptions of the actual oral teacher feedback during collaborative learning?*



To answer this question effectively, three specific sub questions are addressed in this thesis:

- 1) What is the quantity and quality of the oral teacher feedback students receive during collaborative learning?
- 2) What are the students' perceptions of the quantity and quality of the orally received teacher feedback during collaborative learning?
- 3) What is the relationship between the students' characteristics and the students' perceptions of the teacher feedback quality?

In Figure 1, the different variables in this research are displayed as well as the possible relationships between the variables.



*Figure 1.* A schematic display of the different variables presented in this research, with the numbers referring to the relationships between variables and the different analyses conducted in order to answer the various sub questions.

The number one and two relationships in Figure 1, refer to the first two sub questions and the analysis of the orally received teacher feedback and the students' perceptions of this teacher feedback respectively. The number three analysis refers to the relationship that exists between the student characteristics and students' perceptions of actual teacher feedback types. The main question refers to the possible match existing between the independent variable (i.e., the teacher feedback) and the response variable (i.e., the students' perceptions of the teacher feedback).

## Research method

### *Participants*

The participants in this research are second year students and their teachers in Dutch university preparatory secondary history education ('vwo' in Dutch), who work with the learning material MeMo, a much used method for history education in the Netherlands (Schuitema, Veugelers, Rijlaarsdam, & Ten Dam, 2007). In Dutch university preparatory secondary education, students can attend either 'atheneum' or 'gymnasium'. Students with higher performance levels often attend 'gymnasium', where also Latin and Greek language education is part of the curriculum. One of the classes is an 'atheneum' university preparatory secondary class, while the other two classes are 'gymnasium' university preparatory secondary classes.

The total sample is comprised of twenty groups of three to four students ( $N = 77$ ), from three classes of university preparatory secondary education in the same school in the Netherlands. To constitute the small collaborative groups, students are divided according to their average history grades. Groups contain either high and middle achieving students, according to the average history grades, or middle and low achieving students, thus constituting heterogeneous collaborative groups. Of the total of 78 students in the three classes, only one student from class 1 is excluded from the research analysis, as this student failed to attend the second history lesson, and thus did not join in the collaborative learning assignment.

Of the participants included in the analysis forty-one are female (53%) and thirty-six are male (47%), so there are slightly more female than male students. On average the students are 13.6 years of age ( $SD = 0.52$ ). Of the three classes in this study, two classes receive history education from the same teacher. There are thus two teachers in this study who are both male and are 35 and 26 years of age. They have respectively seven and four years of working experience as teachers at the moment of this research and both have one or two years working experience as history teachers in this particular school.

### *Design*

This research project does not deliberately manipulate the investigated variables, but aims to observe the naturalistic state in the classroom during a newly introduced collaborative learning task. The research in this study is therefore more a correlational research (Field, 2009). In this research the actual orally received teacher feedback is considered to be the independent variable, whereas the students' perceptions of the teacher feedback are considered to be the response variable, as the students' perceptions are based upon the feedback they receive. The relationship or match between these two variables is investigated as well as the mediating role students' characteristics play in relation to the students' perceptions of the teacher feedback.

In this research fully transcribed video-material made within the three classrooms during collaborative student learning is analysed as well as two student self-report questionnaires. These questionnaires concern the students' learning characteristics in history class and the students' perceptions of the actual oral teacher feedback during a collaborative learning task.

### *Instruments*

Multiple instruments are used to investigate the various research questions. Two questionnaires are used to let the students self-report a) their learning characteristics and b) their perceptions of the teacher feedback. One collaborative learning task is used to engage the students in collaborative learning.

#### *The student characteristics questionnaire*

In order to investigate the student characteristics a questionnaire is constituted consisting of different variables and scales from an existing questionnaire. For this questionnaire the subscales “intrinsic goal orientation”, “extrinsic goal orientation”, “self-efficacy for learning and performance”, “help seeking” and “peer learning” of The Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich, Smith, Garcia, and McKeachie (1991) are used. The student characteristics questionnaire (SC\_Q) is made appropriate for the participants’ age and the present learning context (i.e., history class and the collaborative learning assignment). The SC\_Q consists of 27 items, and takes approximately fifteen minutes to complete. First, the students are asked for their age and gender and two other questions control for the experience the students do or do not have with collaborative learning in small groups and can be answered with either ‘yes’ or ‘no’. For the remaining twenty-three items a five-point Likert answering scale is used ranging from 1 (always not true of me) to 5 (always true of me). Here the questionnaire used differs from the original MSLQ since the original questionnaire used a seven-point Likert scale.

The higher the scores on each scale, the more the students perceive that characteristic to be present within themselves. Table 1, shows an overview of the scales and items presented in the SC\_Q and the questionnaire from which they originate.

Table 1

#### *Scales and items presented in the student characteristics questionnaire (SP\_Q) and their origin*

Scales on the student characteristics questionnaire	Number of items (specific items on scale)	Source
Intrinsic goal orientation	4 (items 8, 12, 21, & 23*)	MSLQ (1991)
Extrinsic goal orientation	4 (items 2, 13, 14, & 22)	MSLQ (1991)
Self-efficacy for learning and performance	8 (items 4, 6, 9, 10, 15, 17, 18, & 20)	MSLQ (1991)
Help seeking	4 (items 5, 11, 16, & 19)	MSLQ (1991)
Peer learning	3 (items 1, 3, & 7)	MSLQ (1991)

*Note.* \*Data analysis excludes item 23, as reliability of the scale improves when it is removed.

As students' perceptions and students' motivational goal orientations are found to be related (e.g., Könings, 2007; Noels et al., 1999), this study makes use of the MSLQ's motivational goal subscales in order to investigate the possible correlation between motivational goal orientation and the students' perceptions of actual teacher feedback. The MSLQ intrinsic goal orientation subscale used in this study is comprised of four items and covers reasons intrinsic to the student for participating in the history course. A sample item on this subscale is "In history class, I prefer course material that arouses my curiosity, even if it is difficult to learn". A higher score on this subscale indicates the student to be more intrinsically goal oriented towards learning. As reliability analysis reveals that item 23 influences the reliability of the scale considerably the choice is made to exclude item 23 from the scale during analysis. The reliability of the intrinsic goal orientation scale containing items 8, 12, and 21 improves from Cronbach's  $\alpha = .68$  into Cronbach's  $\alpha = .71$ , which is a good reliability.

The MSLQ extrinsic goal orientation subscale used here is comprised of four items and covers reasons, lying outside the student, for participating in the history course. A sample item is "Getting a good grade in this history class is the most satisfying thing for me right now" (Cronbach's  $\alpha = .67$ ). A high score on this subscale signifies the student as an extrinsic goal oriented student. The MSLQ self-efficacy for learning and performance subscale consists of eight items and can be defined as the student's self-appraisal of the ability to master the course and the student's success expectancy. A sample item is "I'm confident I can understand the basic concepts taught in this history course" (Cronbach's  $\alpha = .91$ ). A higher score on the self-efficacy subscale means that students perceive themselves to be more self-efficacious. This subscale contributes to this study, as feelings of self-efficacy greatly mediate in feedback interventions (Hattie & Timperley, 2007).

The MSLQ's help seeking and peer learning subscales both regard the use students make of others (i.e., groups or friends) when learning (Pintrich et al., 1993). Both scales are of interest for this study as they both give an indication of the student's position regarding collaborative learning and asking advice or help from others and these are important factors in any collaborative learning environment. The MSLQ help seeking subscale consists of four items, which all focus on seeking help from both teachers and peers. A sample item is "I ask the instructor to clarify concepts I don't understand well" (Cronbach's  $\alpha = .63$ ). As item 16 on this scale was negatively phrased this item is recoded so that a higher score on this scale measures a positive attitude towards help seeking. The MSLQ peer learning subscale consists of three items that all cover the student's collaboration with peers in order to learn. A sample item is "I try to work with other students from this class to complete the course assignments" (Cronbach's  $\alpha = .61$ ). A high score on this subscale indicates that the student has a positive tendency to collaborate with peers in order to learn.

Except for the adjustment of the questions to the specific domain of history education and the translation in Dutch, no further modifications are made to the original items. All questions are directly translated into Dutch for the use of the questionnaire in Dutch history education. A small-scale pilot is conducted with a pair of second year students engaged in university preparatory secondary education. The entire questionnaire (in Dutch) can be found as Appendix A in this thesis.

### *The student perceptions of feedback questionnaire*

A second questionnaire is developed based on the Student Assessment For Learning Questionnaire (SAFL-Q) by Pat-El, Tillema, Segers, and Vedder (2011) and theory on teacher feedback (Shute, 2008). The questionnaire investigates the students' perceptions of the actual teacher feedback received. As the student perceptions of feedback questionnaire (SP\_Q) is administered after completion of the collaborative learning assignment, time to fill in the questions was scarce. The amount of questions is therefore limited to a maximum of nineteen questions, and it will take approximately ten to fifteen minutes to complete the questionnaire.

The questionnaire is divided into four parts. Part A contains five questions on the clarity of goals and criteria of the collaborative learning assignment, since the feedback given should concur with the criteria that are required for success (e.g., Hattie & Timperley, 2007). Without known and clear goals students will not be able to close the gap between their current and desired achievement (e.g., Kluger & DeNisi, 1996). All five questions in Part A are taken from the SAFL-Q by Pat-El, et al. (2011) and are slightly modified for the use in this research. For answering these five questions a Likert five-point answering scale is constructed containing the options 1 (I disagree), 2 (I slightly disagree), 3 (I neither disagree nor agree), 4 (I slightly agree), and 5 (I agree). A sample item is "It was clear what I could learn from the assignment". As reliability analysis shows a considerable improvement in reliability when item 1 is removed from the analysis and this item seemed to fit least well with the other items, the choice is made to exclude item 1 from this students' perceptions of goal clarity scale. Cronbach's alpha for the students' perception on goal clarity scale improves from  $\alpha = .59$ , to  $\alpha = .63$ .

Part B consist of one question regarding the quantity of teacher talk that is, the actual number of times the teacher said something to the student(s). The students answer this question by ticking their answer to the question "How many times did the teacher said something to you or your group during the collaborative learning task?" There are four answering categories, namely 0 times (never), 1 to 2 times (sometimes), 3 to 4 times (regularly), and 5 or more times (often).

Part C consists of one question regarding the receiving party in the intervention. Since only students who actually perceived themselves to have received teacher comments on one or more occasions during the collaborative learning task are able to answer this question, the students who did not perceive themselves to have received teacher comments fill in only part A en B of the questionnaire. In part C, the students are asked who received information from the teacher during the collaborative learning task. This is important since according to Hattie and Timperley (2007) feedback messages can be confounded by the students' perception of the feedback as being either relevant only to oneself or only to others in the group. The original six possible answers to the question "At whom was the teacher feedback addressed?" ranged from "only at you yourself" and "only at other students in your group (and thus not at you)", to "at you yourself, at the other students in your group and at your entire group". After further analysis of the questionnaire, it seemed plausible that three categories would be interpreted equally, and thus would not be mutually exclusive. The decision was made therefore to combine these three original answering categories into one answering category "at the entire group and at individual students in the group".

The last part of the SP\_Q, part D, is also only relevant for students who perceived themselves to actually having received teacher feedback. Part D contains twelve items regarding the amount of elaboration presented in the orally received teacher feedback, and will be answered using the same Likert five-point answering scale as is used in part A ranging from 1 (I disagree) to 5 (I agree). Sample items are “The teacher asked questions, which helped to understand the assignment.” and “The teacher said the given answer was correct or incorrect and **also told why that was so.**” Items 1, 2, 5, 10, 11, and 12 are also taken from and inspired by the SAFL-Q (Pat-El et al., 2011) and are modified in order to fit the aim of this research that is, the emphasis on learning is replaced by the emphasis on collaborative learning and the collaborative learning assignment. Items 3, 4, 7, 8, and 9 are inspired by the verification-elaboration continuum that Shute (2008) presents in her article, and are also adapted to the collaborative learning environment. Item 6 regards the importance of understanding the goal of the collaborative learning assignment and is incorporated as the clarity of goals is deemed to be important for the impact of the feedback message (e.g., Hattie & Timperley, 2007; Kluger & DeNisi, 1996; Pat-El et al., 2011).

In order to control for the validity of the theory underlying the students’ perceptions of teacher feedback quality (i.e., the types of feedback), a principal component analysis (PCA) is conducted. The PCA is conducted on the 12 items of Part D of the SP\_Q. Direct oblimin rotation is used as this rotation method allows for correlation between the components. After initial analysis, a further analysis is conducted with a maximum set on 2 components, as this is most in line with the verification-elaboration continuum mentioned in previous feedback research, and because the scree plot provided also shows an inflexion that justifies retaining 2 components.

Inspection of the correlation matrix shows weak correlations between several items and the sample is quite small for conducting a PCA. Looking at the Kaiser-Meyer-Olkin measure (KMO) and Bartlett’s test of sphericity however, the first verifies the sampling adequacy for the analysis as  $KMO = .670$ , which is relatively good (Field, 2009). Bartlett’s test of sphericity  $\chi^2(66) = 253.38$ ,  $p < .001$ , indicates that the component matrix is significantly different from an identity matrix. The determinant of .015 also proves that multicollinearity is not a problem (Field, 2009). This means that the correlations between items are sufficiently large for conducting a PCA (Field, 2009). The results from both the pattern matrix containing the factor loadings and the structure matrix are presented in Table 2.

Table 2 shows the two components with their eigenvalues and explained variance. Both components have eigenvalues larger than 1, and together explain almost 47 percent of the variance. The items that cluster on the same components in Table 2 suggest that component 1 represents students’ perceptions of feedback that offers an elaboration (i.e., more information on the learning content or learning process). Component 2 represents the items that ask after verification feedback that is, general, concise, and simple feedback (Shute, 2008) on the correctness of for example, an answer or behaviour. Elaboration feedback in this study is divided into three main categories, also used as codes while coding the transcripts, namely elaborative feedback, explanative feedback, and supportive feedback.

For the use of the SP\_Q in Dutch education all questions are presented in Dutch. The entire questionnaire (in Dutch) can be found as Appendix B in this thesis.

Table 2

*Direct oblimin rotated component loadings for the students' perceptions on actual feedback type items (N = 66)*

Items	Pattern components		Structure components	
	1	2	1	2
The teacher said what needed to be improved in order to complete the assignment correctly.	<b>.80</b>	.15	<b>.80</b>	.13
The teacher said what the strengths were of the answer that was given.	<b>.80</b>	-.04	<b>.80</b>	-.07
The teacher said the given answer was correct or incorrect and <b>also said why that was so.</b>	<b>.78</b>	.09	<b>.77</b>	.07
The teacher said what the weaknesses were of the answer that was given.	<b>.76</b>	.19	<b>.76</b>	.17
The teacher asked questions, which helped to understand the assignment.	<b>.64</b>	-.31	<b>.65</b>	-.33
The teacher explained the goal of the assignment again.	<b>.50</b>	-.20	<b>.51</b>	-.22
The teacher explained how you had to collaboratively work together.	<b>.48</b>	.30	<b>.48</b>	.22
The teacher said that we did or did not worked together properly and also said why that was so.	.25	-.03	.25	-.03
The teacher <b>only</b> said the given answer was correct or incorrect.	.24	<b>.70</b>	.22	<b>.69</b>
The teacher gave hints, which helped to understand the assignment.	<b>.44</b>	-.64	<b>.46</b>	-.66
If an explanation was asked for the teacher gave one.	.30	-.63	.32	-.64
The teacher only said that we did or did not worked together properly.	.13	<b>.47</b>	.12	<b>.47</b>
Eigenvalues	3.81	1.79		
% of variance	31.71	14.95		

*Note.* Component loadings over .40 appear in bold. All loadings are rounded to two decimal numbers.

#### *Collaborative learning task*

A collaborative learning task is developed following an exemplar task by Schuitema et al. (2007) for MeMo, an educational method for history education in lower secondary education, lower vocational education and the second phase in the Netherlands. The original learning task developed by Schuitema et al. (2007) is part of a series of thirteen lessons and deals with the subject of American history. The original design of the task stimulates an active group dialogue, which, according to Schuitema (2008) makes working together essential.

In this research the task is made to fit the subject currently discussed in the history classes, namely the Industrial Revolution. The main characteristics of the task stay intact, only the subject and the length of the assignment are modified, since there also had to be sufficient time to administer the questionnaire after the period of collaborative work. The collaborative assignment is discussed individually with both history teachers beforehand and their considerations, remarks and suggestions are used to further develop the collaborative learning task.

All participating students work on the exact same collaborative learning task and they have approximately the same amount of time to finish the assignment. The assignment consists of a short period of time in which the students individually read the assignment and a longer period of collaborative work. By reading the assignment, the students are informed of the assignment's objectives that is, they are given information about what they will have achieved after completing the assignment. The students will also be informed about the assignment's specificities and the expectations concerning the collaborative learning.

In the period of collaborative work, the students attempt to answer three questions by means of studying the following sources: a) written personal historical accounts, b) visual images, and c) professional accounts based on historical research. Through deliberating and cooperating the students are expected to formulate a correct and complete answer to each question, while using the different resources. They have to constitute a joint (group) answer that each group member can individually defend. The time scheme for the collaborative learning task, including the reading of the assignment is approximately twenty minutes. The newly developed collaborative learning task is presented as Appendix C in this thesis.

#### *Observational scheme and coding categories for teacher feedback*

An observational scheme is constructed in order to score the actual oral teacher feedback offered during the collaborative learning sequence. The actual teacher-student interaction during collaborative learning is fully transcribed for each class, and subsequently coded using sixteen coding categories for actual teacher feedback and one category representing social talk. Operationalisations and examples of the used codes are presented in Appendix D. A second coder is trained in coding the teacher utterances during collaborative learning. Ten percent of the teacher utterances appearing in the transcripts are coded by the second coder in order to ensure intercoder reliability. Randolph's free-marginal multirater kappa was computed which revealed an excellent overall agreement between the two raters of .90.

The unit of analysis for coding is each teacher utterance within the collaborative learning sequence with a student or group of students. In order to distinguish between feedback directed at different groups the transcripts are divided in episodes. One episode signifies a period of time during collaborative learning in which the teacher is engaged in conversation with one particular group of students or engages the entire class in a sequence of classroom instruction.

The observational scheme concentrates on the quantity and quality of teacher feedback received by the students. The "quantity" of the teacher feedback is the number of times the teacher offers feedback to students of a specific group. The "quality" of feedback refers to the amount of verification and elaboration present within the feedback message (i.e., the type of teacher feedback). Following Shute (2008) this study distinguishes several categories of feedback quality. Table 3 shows the four main types of teacher feedback used in this study, and the category presenting social talk, all with examples.



Table 3

*The main categories of feedback quality and social talk*

Type of feedback	Examples
Verification feedback	"Perfect", "Yes, very good.", "Yes, every source."
Elaboration feedback	"Yes, because then you loose employees.", "Look, almost everything is filled in. Very good."
Explanative feedback	"Yes, but while discussing it together.", "Not every source offers the information for which you are looking."
Supportive feedback	"What would be a reason to abolish child labour?", "Get busy, this attitude won't work."
Social talk	"What did you say?", "I just opened the door.", "This is a microphone.", "No, you don't have to learn this for the test."

First the teacher feedback can contain information on the correctness of the product or process of collaborative learning (i.e., a verification) (Shute, 2008). Following Shute (2008, p. 158) verification is defined as "the simple judgement of whether an answer is correct". Secondly, the feedback may offer an elaboration as well as a verification. An elaboration is according to Shute (2008) the informational aspect of the teacher feedback and informs students about the correctness of their response, answer or collaborative learning process (i.e., verification) but always also explains why this is correct or incorrect. It could therefore also indicate the strengths and weaknesses of the students' response.

The third category of feedback also offers the students elaborate information. It includes an explanation or instruction clarifying either the learning task or the learning process (Shute, 2008). Clarifying the goal of the assignment is also part of this kind of feedback. Clarifying the assignment's goal is critical if feedback is to have meaning and can help to reduce the gap between current collaborative learning and the desired way of learning (e.g., Hattie & Timperley, 2007; Sadler, 1989). Explanative feedback could include a verification, but this is not necessary (Shute, 2008).

The fourth category of teacher feedback is also elaborate, but offers the students support. Supportive feedback involves concrete specific comments but evades giving students the correct answer (Shute, 2008). The students are pointed in the right direction by receiving hints, clues or even worked out examples (Shute, 2008). This kind of feedback could also involve guiding teacher questions as eliciting reasons and explanations from students through rich classroom questioning. This offers students direction and the possibility to improve their collaborative learning (James & Pedder, 2006). This kind of feedback could also involve a verification (Shute, 2008).

Speaking of the quality of feedback it's also important to consider whether the feedback is aimed at either the task or the process, as according to Hattie and Timperley (2007) these different levels of feedback differ in effectiveness. Feedback aimed at the task contains information on the subject matter. Feedback on the process

involves comments on the students' collaborative learning behaviours and their attitudes. It thus informs the students on what needs to be done and activities they should engage themselves in. In order to also account for comments that are not explicitly directed at either the process or the task a third category of general feedback is also included.

In order to account for teacher-student interactions that do not give information on either the learning task or the learning process, a category of social talk is incorporated in the scheme. Social talk is formulated as talk or feedback that is not directed at either the heart of the learning task or the heart of the learning process. Social talk could therefore relate to the classroom environment and certain aspects of the task that are not important for learning and finishing the assignment, for example talk on the names of the collaborative group. Social talk can contain feedback, but as this feedback is not relevant to the collaborative learning assignment, it is considered to be social talk instead of feedback.

By analysing the narrative data, attention will also be paid to whether the interventions taking place are initiated by either the teacher or the students. A teacher initiated intervention starts with the teacher asking a question or making a comment. An intervention initiated by students starts with them posing a question to the teacher or holding up their hand indicating they have a question.

The various instruments developed in order to make the observation of actual oral teacher feedback possible are all placed in this thesis as Appendices. The basic observational scheme for actual oral teacher feedback is presented in Appendix E. The transcript convention used to make the transcripts of the three classes and the transcripts of class 1, class 2, and class 3 are included as Appendix F, G, H, and I respectively.

### *Procedure*

Permission for carrying out the study is obtained from the principal of the school and the two participating history teachers. Permission is also obtained from the school for videotaping the teacher-student interaction in the classroom. Before the start of the classroom research, the teachers are asked to give an account of each student's proficiency level, by evidence of the student's average history grade.

In the first history lesson, the students are introduced to the researcher and the research. Subsequently they are asked to fill in the SC\_Q. In the second history lesson (two to four days after the first history lesson) the students worked in their small groups, on the collaborative learning task. Subsequently they completed the SP\_Q. Both questionnaires contain instructional information on the questionnaire, which the students are informed to individually read before starting the actual questionnaire. The teachers have no prior knowledge about the content of the questionnaires in order to not influence their behaviour and demeanour (towards and during the research).

The teachers received the collaborative learning task in advance of the second history lesson, since they were expected to answer their students' questions on the collaborative assignment and the subject of the Industrial Revolution. The teachers do not receive any information as to how they should act during the collaborative learning task, they are asked to act as naturally as possible, as it is the objective of the research to observe the natural teacher behaviour.

To constitute small collaborative groups, students are divided according to their average history grades. This constitutes heterogeneous groups which, according to Blatchford, Kutnick, Baines, and Galton (2003), is more a factor for successful group work than a homogeneous group composition. The difference between the

students' levels in the group should however not be too great (Saab et al., 2007). The groups in this research are composed by the method also used by Saab et al. (2007) based on a method by Pijls, Dekker, and Van Hout-Wolters (2003). This means that students are appointed and only in class 1 actually receive an individual token (in this case a piece of paper) based on their average history grade; they received either a square yellow token signifying a high grade, a round yellow token signifying a low grade, or a triangular blue token signifying a middle grade. The students are not informed about the significance of the colours or forms of their tokens.

In order to compose heterogeneous groups, the students were first paired up with a student with a different coloured token, which constituted dyads made up of high and middle achievers or low and middle achievers. Secondly, in order to form groups of four students each dyad joined another dyad that had the same forms of tokens. This will constitute small groups of four students either existing of high and middle achievers or low and middle achievers. The groups are formed by the researcher with some help of the teachers.

The choice for constituting three to four-member groups is based on the meta-analysis by Lou et al. (1996), who found evidence that group size can significantly moderate the effect within-class grouping has on student achievement. They found that small groups consisting of three to four members seemed more effective in positively affecting student learning than dyads and larger groups (Lou et al., 1996).

An effort was thus made to form as many groups of four students in each class. Because some classes had an odd number of students present at the time of the collaborative learning assignment some few triads were formed. The total sample comprised of eight groups containing low and middle achievers and twelve groups containing high and middle achievers. As it turned out students were not completely randomly grouped as the students who missed out on the first questionnaire were purposely put into triads. Only one student missed out on the collaborative learning assignment and was thus not placed in a collaborative group.

During the second history lesson, the researcher videotaped the teacher-student feedback interaction during collaborative learning in the classroom. The video camera was positioned to visually capture as many of the students in each class, but the camera had to follow the teachers around as they visited groups throughout the collaborative learning session. During the collaborative learning sessions both teachers also wore a microphone, which was connected to the camera and that enabled the researcher to better collect the oral teacher feedback offered to the students.

#### *Method of data analysis*

As this study aims to describe the real oral feedback setting, this classroom study does not intentionally manipulate the teacher feedback or the collaborative learning situation. The study does however introduce a collaborative learning assignment in the classrooms. The analyses address the possible correlations between the various variables and possible causal relationships, because as student perceptions are thought to be based on the received teacher feedback, there could be a causal relationship between these two variables.

The students' previous experiences with collaborative learning in small groups are analysed first. For analyzing the actual oral teacher feedback given, frequency counts and percentages are calculated. This is made possible as the fully transcribed narratives of the teacher-student interventions and interactions during collaborative learning are coded for the occurring feedback types. The codes used represent the

various categories of feedback quality (i.e., the various types of teacher feedback) used in this research, which resemble the types of feedback that are presented on part D of the SP\_Q. By using percentages to illustrate the distributions of interventions and feedback within classes, it is possible to compare the practice of the two teachers in the different classes.

Students' perceptions of a) goal clarity, b) the frequency of teacher information, c) the direction of the teacher comments, and d) actual teacher feedback types, are analysed using the scores from the SP\_Q. Frequency counts and descriptive information are given. In order to analyse the relationship between class and student perception Fisher's exact test is chosen instead of Pearson chi-square test, as the expected cell count in half of the cells appeared to be less than five.

In order to analyse the theory on students' perceptions of teacher feedback types, a principal component analysis (PCA) is conducted on Part D of the SP\_Q. Frequency counts are given and descriptive information is used to further analyse the students' perceptions. In order to analyse the effect of class on student perception of feedback type a multivariate analysis of variance (MANOVA) is conducted.

To analyse the relationship between the observed (i.e., the actual) number of interventions and the students' perceptions of the quantity of interventions Fisher's exact test is used. Fisher's exact test is used rather than Pearson chi-square test, as several expected frequency counts in the contingency table were less than five. In order to make this possible the variables 'student perception of interventions per group' and 'student perception of teacher interventions per group' are made categorical. The relationship between actual feedback types offered and the students' perceptions of these types of feedback is analysed through correlational analysis. As not all variables are normally distributed and the assumption of a bivariate normal distribution is sometimes violated, parametric as well as non-parametric tests of correlation are used. Simple regression analysis is also conducted to investigate if teacher feedback is a good predictor for student perceptions of the teacher feedback.

The relationship between the five student characteristics (i.e., intrinsic goal orientation, extrinsic goal orientation, self-efficacy, help seeking, and peer learning) and students' perceptions of a) verificative feedback, b) elaborative feedback, c) explanative feedback, and d) supportive feedback is analysed through correlational analysis and multiple regression analysis.

## Results

The analyses start by checking students' previous experiences with collaborative learning in small groups. The frequencies of actual interventions during collaborative learning, and the frequencies and types of actual oral teacher feedback and social talk are analysed next. Furthermore, the students' perceptions of a) goal clarity, b) the frequency of teacher information, c) the direction of the teacher comments, and d) the actual teacher feedback types are examined. The result section proceeds with the analyses of the match between actual intervention quantity and the students' perceptions of this quantity, and the actual teacher feedback quality (i.e., teacher feedback types) and the students' perceptions of the actual teacher feedback quality. Last, the relationships between students' characteristics and students' perceptions of the teacher feedback quality are analysed.

### *Students' experiences with collaborative learning*

In order to get a clear view on the collaborative learning situation in this study it's important to mention the number of students and groups in each class and the students' experiences with collaborative learning. Only one student missed out on the collaborative learning assignment and is thus not placed in a collaborative group. This constitutes the following number of students available for data analysis: 24 students in class 1, 23 students in class 2, and 30 students in class 3. Table 4 shows the amount of collaborative groups in each class and also the number of students in these groups. It must be clear that in this research the students in both class 1 and class 3 are taught by the same history teacher. In class 2 history is taught by another teacher. In both class 1 and 2 there are six collaborative learning groups. In class 3, with considerably more students, eight collaborative learning groups are formed.

The data reveal that all students perceive themselves to have had previous experience working in small collaborative groups on assignments in school. In history education the greatest part of the students (83%) say they worked in small groups on an assignment some of the time, against a smaller group of students who said this happened often during history education (17%). In other courses than history, somewhat more students say to have experience working in collaborative groups often (58%) against students who say to work in groups some of the time (42%).

Table 4

### *The number and division of groups in each class*

	Teacher 1 Class 1	Teacher 1 Class 3	Teacher 2 Class 2	Total
Number of groups during CL with 4 students	6 100%	6 75%	5 83%	17 85%
Number of groups during CL with 3 students	0 0%	2 25%	1 17%	3 15%
Total Number of CL groups	6 100%	8 100%	6 100%	20 100%

## Actual oral teacher feedback

### *Frequency of interventions and actual oral teacher feedback*

To answer the first sub question about the quality and quantity of the teacher feedback, the distribution of the interventions during collaborative learning per class is shown in Table 5. A distinction is made between interventions that are initiated by the teacher and interventions that are initiated by students, through for example asking the teacher a question. It must be mentioned however that the time spend on collaborative learning in each class is not the same. The time spend on collaborative learning is highest in class 1 where students and teacher spend 26:16 minutes on collaborative learning. In both class 2 and 3, this time is less, 17:38 minutes and 16:28 minutes respectively. Of the 17:38 minutes in class 2, for 2:15 minutes no teacher feedback or social talk could be coded as a problem appeared with the sound recorder.

Table 5

### *Distribution of interventions during collaborative learning*

	Teacher 1 Class 1	Teacher 1 Class 3	Teacher 2 Class 2	Total
Interventions initiated by the teacher	21 62%	15 48%	8 47%	44 54%
Interventions initiated by the students	13 38%	16 52%	9 53%	38 46%
Total number of interventions	34 100%	31 100%	17 100%	82 100%

*Note.* The percentages shown are percentages within each class.

As is show in Table 5 a total of 82 interventions are made during the collaborative learning in the three classes. Slightly more interventions are initiated by the teachers. The teachers initiated 44 interventions against 38 interventions initiated by the students. In both classes taught by teacher 1 the number of interventions are exactly or almost double the number of interventions in class 2 taught by teacher 2, 34 and 31 interventions against 17 interventions respectively.

What becomes apparent from Table 5 is that the distributions of the interventions within the classes are almost equal for class 2 and class 3 however. In both classes roughly half of the interventions are initiated by the teacher and half by the students. While teacher 1 in class 3 initiates 48 percent of the interventions, this teacher initiates considerably more interventions in class 1, namely 62 percent. Of the interventions initiated by the teacher some are not aimed at an individual student or a group of collaborative learning, but at the entire classroom. Teacher 1 uses classroom intervention aimed at all students on three occasions in class 1 and on two occasions in class 3. Teacher 2 does not use classroom intervention during the collaborative learning sequence.

During an intervention teachers can offer students various kinds of information (i.e., feedback or social talk). In the same intervention teacher feedback can be offered more than once and therefore all feedback or social talk occurring during the interventions in the collaborative learning episode in the three classes is coded and counted. Table 6 shows both the quantity (i.e., number and percentages)

and quality (i.e., the type of feedback) of the actual oral teacher feedback and social talk per class.

Table 6

*Distribution of actual oral teacher feedback types and social talk*

Actual oral teacher feedback			Teacher 1 Class 1	Teacher 1 Class 3	Teacher 2 Class 2	Total per category	Total per main category
Verificative	General		1 1.05%	0 0%	1 1.64%	2 0.91%	48 21.82%
	Content		3 3.16%	3 4.68%	9 14.75%	15 6.82%	
	Process		19 20%	6 9.37%	6 9.84%	31 14.09%	
Elaborative	General		0 0%	0 0%	0 0%	0 0%	8 3.63%
	Content		0 0%	1 1.56%	0 0%	1 0.45%	
	Process		3 3.16%	2 3.13%	2 3.28%	7 3.18%	
Explanative	General		0 0%	0 0%	0 0%	0 0%	46 20.91%
	Content	Without verification	4 4.21%	1 1.56%	4 6.56%	9 4.09%	
		With Verification	0 0%	2 3.13%	3 4.92%	5 2.27%	
	Process	Without verification	8 8.42%	8 12.5%	1 1.64%	17 7.73%	
		With Verification	12 12.63%	2 3.13%	1 1.64%	15 6.82%	
Supportive	General		0 0%	0 0%	0 0%	0 0%	118 53.64%
	Content	Without verification	0 0%	3 4.68%	4 6.56%	7 3.18%	
		With Verification	0 0%	0 0%	4 6.56%	4 1.82%	
	Process	Without verification	39 41.05%	26 40.63%	21 34.43%	86 39.09%	
		With Verification	6 6.32%	10 15.63%	5 8.20%	21 9.55%	
Total teacher feedback		95 100% 50.26%	64 100% 46.38%	61 100% 76.25%	220 100% 54.05%	220 100% 54.05%	
Social talk		94 49.74%	74 53.62%	19 23.75%	187 45.95%	187 45.95%	
Total teacher utterances		189 100%	138 100%	80 100%	407 100%	407 100%	

Note. Cursive percentages are the percentages within the total of teacher utterances.

Table 6 shows that of all teacher utterances just more than half are actually feedback given by the teachers. Of all teacher feedback offered during collaborative learning over half is supportive teacher feedback (54%). Verificative (i.e., only corrective feedback) and explanative feedback are almost equally represented with 48 and 46 occasions respectively. Both account for roughly twenty percent of the teacher feedback. It must be mentioned however that verificative feedback is always part of elaborative feedback (i.e., a verification accompanied by extra information on why the information is or is not correct). Explanative feedback and supportive feedback can also include a verification. When combining all feedback situations in which a verification is given, whether or not combined with extra information, it becomes apparent that 46 percent of the feedback actually contains a verification.

Finally, elaborative feedback is given eight times. Of all feedback given most is directed at the learning process. On 177 occasions (81%) the feedback is directed at the collaborative learning process, the students' learning behaviour, or describes the task process. Feedback on the content of the task is offered 41 times, which is 19 percent of the total teacher feedback. General teacher feedback is offered twice.

Teacher 2 in class 2 makes the least amount of utterances. He gives feedback on 61 occasions, which is 76 percent of all his utterances. In 19 cases teacher 2 is uttering social talk. Teacher 1 gives feedback in half of his utterances in class 1 (50%) and in almost half of his utterances in class 3 (46%). In half and over half of all his utterances teacher 1 engages in social talk in both his classes.

In all three classes most feedback given is supportive. In class 1, 3, and 2 the percentages of feedback that is supportive are 47 percent, 61 percent, and 56 percent respectively. Somewhat less feedback is verificative or explanative, but least feedback is elaborative. Teacher 1 appears to give somewhat more explanative feedback than teacher 2, 25 and 20 percent against 15 percent. Teacher 2 gives more verificative feedback however, although the difference between class 2 and class 1 is small, 26 against 24 percent. In class 3, teacher 1 gives verificative feedback on nine occasions, which accounts for 14 percent of all of the feedback given. Elaborative feedback is given on 2 or 3 occasions in each class and is least represented.

All collaborative groups receive supportive feedback at least once. Explanative feedback is offered to all but two groups and these groups are both from class 3. Verificative feedback is not received by one group in class 2 and two groups in class 3. Elaborative feedback on the contrary is received by only eight of the twenty groups. In class 1 only three, and in both class 2 and class 3 only two groups receive elaborative feedback.

Both teacher 1 and 2 give general feedback on 1 occasion. Most of the feedback is aimed at the learning process however. In class 1 and 3, teacher 1 gives this type of feedback on 87 and 54 occasions, which account for 92 and 84 percent of all feedback in class 1 and 3 respectively. Content related feedback in class 1 and 3 thus accounts for the remaining 8 and 16 percent respectively. Teacher 2 directs his feedback also more often on the learning process, but the difference between content and process related feedback is less great than for teacher 1. Of all feedback 60 percent is aimed at the learning process, against 40 percent of the feedback being directed at the content of the learning task.

A Kruskal Wallis test is conducted in order to compare the total amount of teacher feedback per class. As the assumption of homogeneity of variance is violated the Kruskal Wallis test of several independent samples is used instead of a one-way analysis of variance. A significant difference in the total amount of teacher feedback was found between the three groups  $H(2) = 33.69, p < .001$ . There is thus an effect for



class for the total amount of teacher feedback received during collaborative learning. A Bonferroni post hoc test corroborated this finding as the average amount of total feedback received is significantly different between class 1 and 2 ( $p < .001$ ), class 1 and 3 ( $p < .001$ ), and class 2 and 3 ( $p = .050$ ). On average the total amount of teacher feedback offered is highest in class 1 ( $M = 15.83$ ,  $SD = 2.53$ ), lowest in class 3 ( $M = 8.00$ ,  $SD = 3.47$ ), while class 2 stays in the middle ( $M = 10.48$ ,  $SD = 4.70$ ).

### Student perceptions

#### *Students' perceptions of goal clarity*

The second sub question deals with the students' perceptions. Students' perceptions of goal clarity is part of this question. Students on average appear to agree on the goals of the collaborative assignment being clear ( $M = 3.75$ ,  $SD = 0.75$ ). The goals are perceived to be most clear by the students in class 2 ( $M = 3.96$ ,  $SD = 0.64$ ), where 20 students (87%) perceive the goals of the assignment to be clear. Only two students (9%) do not perceive the goals to be clear, while one student is left indecisive (i.e., neither agrees or disagrees with the statement).

The goals are perceived to be least clear in class 3 ( $M = 3.57$ ,  $SD = 0.82$ ). In this class six students (20%) perceive the goals of the assignment to be unclear, against four students (17%) in class 1 ( $M = 3.77$ ,  $SD = 0.74$ ). A total of six students in class 3 are indecisive about the clarity of the goals, against one student in class 1. The greater amount of students in both class 1 and 3, respectively 19 students (79%) and 18 students (60%), perceive the goals to be clear however. Most of the students in either class thus agree upon the goals of the assignment being clear.

#### *Students' perceptions of the frequency of teacher information*

The students also perceive the quantity of teacher comments directed at them or their group during the collaborative learning task. Only two students perceive themselves to not having received any comments by the teacher (3%). Most of the students, 38 (49%), perceive the teacher to have only sometimes (i.e., on one or two occasions) given them information. A smaller, but still a considerable number of 29 students (38%) perceive the teacher to have regularly said something to them or their group (i.e., three or four times). Just eight students perceive the teacher to have said something often during collaborative learning (i.e., on five or more occasions).

Of the 23 students in class 2, ten students perceive teacher 2 to have said something some of the time, against thirteen students who perceive this to be regularly the case. Both students who perceive never to have gotten any comments or attention by their teacher are from class 3, and are not from the same collaborative group. A number of 17 students in class 3 perceive teacher 1 to have said something only one or two times, against nine students who perceive their teacher to give them feedback three to four times, and two students who perceive this to be the case on five or more occasions (and these two students do come from the same group). The remaining six students who perceive teacher 1 to say something on five or more occasions are from class 1, and are divided over four groups. Of the remaining students, 11 students perceive teacher 1 to have said something some of the time, against seven students who perceive this to regularly be the case.

The relationship between the class and the students' perceptions of the number of times the teacher addressed them or their group during collaborative learning is significant Fisher's exact test = 11.95,  $p = .030$ . Fisher's exact test is used instead of

the Pearson chi-square test as six of the cells in the contingency table (50%) have an expected count less than five.

#### *Students' perceptions of the direction of teacher comments*

The students also perceive at whom the teacher directs his words during collaborative learning. Table 7 shows the frequencies of the students' perceptions of the direction of the teacher talk for each of the three classes.

Table 7

#### *Frequencies of students' perceptions of the direction of the teacher talk*

At whom is the teacher feedback addressed	Teacher 1 Class 1	Teacher 1 Class 3	Teacher 2 Class 2	Total
<b>Only</b> at you yourself	0	0	0	0
<b>Only</b> at your entire group (at everyone in your group)	10	13	13	36
<b>Only</b> at other students in your group (and thus not at you)	1	2	0	3
At the entire group, but also at individual students	13	12	9	34
Total	24	27	22	73

*Note.* There is a total of four missings, with one missing in class 2 and three in class 3. Among these three are the two students who perceive themselves or their group not to have received any teacher feedback at all.

None of the students in the three classes perceive their teacher's comments to be directed only at themselves. Almost half of the students (36) in the three classes perceive the teacher to direct his words at the entire collaborative group. Only three students perceive the teacher to direct his comments only at other students in the group. A group of 34 students perceive the teacher feedback to be aimed at both the entire group and at individual students. In class 2, 13 students perceive their teacher to direct his comments only on their entire group, compared to ten students in class 1 and 13 students in class 3. The remaining students mostly perceive the words of the teacher to be directed to their entire group and at individual students in the group. Only one student in class 1 and two students in class 2 perceive only other students than themselves to be the focus of the teacher's words.

#### *Students' perceptions of actual teacher feedback quality*

In order to investigate the part of the second sub question that focuses on the students' perceptions of teacher feedback quality it is found that in both class 1 and class 2 all students perceive their teacher to offer them feedback. In class 3 however, two students report not perceive teacher 1 to have given them feedback. On average the students mostly agree on the fact that their teachers offered explanative ( $M = 3.45$ ,  $SD = 0.70$ ) and supportive feedback ( $M = 3.38$ ,  $SD = 0.86$ ). Elaborative teacher feedback offering information, on why for example an answer is correct or incorrect, is less positively perceived ( $M = 2.73$ ,  $SD = 0.88$ ). That is, the students somewhat

disagree that their teachers offer this type of feedback or are unsure in their perceptions (i.e., they neither disagree nor agree). The students' perceptions on verificative feedback are least positive, as students mostly disagree or somewhat disagree on their teacher offering them information only on the correctness of their product or collaborative learning ( $M = 1.87, SD = 0.84$ ).

In all three classes a large amount of students fully disagree with being offered verificative feedback by their teacher. The largest group is found in class 2, where 43 percent of the students do not perceive teacher 2 giving only corrective feedback on either their answers or their collaborative learning. On average students in class 2 least positively perceive verificative feedback to be offered ( $M = 1.57, SD = .75$ ). Only one student perceives teacher 2 to have given some verificative feedback as this student agreed somewhat on the teacher giving corrective feedback.

In class 1 verificative feedback is also not perceived to be offered often ( $M = 1.87, SD = .80$ ), and a large group of students fully disagreed on having received this type of feedback (37%). As the remaining students in class 1 further somewhat disagree or are indecisive, none of the students in this class (somewhat) agree on teacher 1 giving them any verificative feedback. In class 3 students are only slightly less negative ( $M = 2.11, SD = .89$ ) as there are four students who somewhat agree on being offered verificative feedback (13%). Six students fully disagree on teacher 1 offering them verificative feedback (20%).

Students also perceive their teachers to offer elaborative feedback. While in class 1 the largest amount of students somewhat disagrees on being offered this type of feedback (46%) another group somewhat agrees on being offered elaborative feedback (29%) ( $M = 2.67, SD = .79$ ). In class 3, 33 percent of the students (somewhat) disagree on being offered an elaboration, against 23 percent who do (somewhat) agree on having received this type of feedback ( $M = 2.72, SD = .98$ ). In class 2, students are equally divided among those who (somewhat) disagree and those who (somewhat) agree (both 30%) ( $M = 2.82, SD = .88$ ). In all three classes large groups of students are indecisive as to whether they do or do not perceive their teacher to having offered them elaborative feedback.

Students in both class 1 and class 3 largely perceive teacher 1 to offer explanative feedback. In class 1 ( $M = 3.57, SD = .55$ ) none of the students disagree on having received this type of feedback. A large group of 16 students (67%) (somewhat) agrees while the remaining students are indecisive. In class 3 ( $M = 3.50, SD = .76$ ) 13 students somewhat agree and 5 students fully agree on having received an explanation (together 47%). While a large group of students is indecisive (43%) only one student somewhat disagrees. In class 2 a group of four students somewhat disagrees on teacher 2 offering them explanations (17%). As the largest group of students is positive about having perceived their teacher giving explanative feedback (48%) the overall perception is still more positive ( $M = 3.26, SD = .76$ ).

Supportive feedback is also perceived to be offered regularly by the teachers. In class 1 ( $M = 3.48, SD = .65$ ) teacher 1 is perceived to have offered support to 71 percent of the students. Only one student somewhat disagrees. In class 3 ( $M = 3.15, SD = .88$ ) a group of five students (somewhat) disagrees (17%), while over half of the students (somewhat) agree (53%). Over half of the students in class 2 perceive teacher 2 to offer them supportive feedback (57%). Although one student disagrees with having received any support, and the average in this class is highest ( $M = 3.55, SD = .99$ ).

However, in order to investigate the effect of class on the students' perceptions of teacher feedback quality a multivariate analysis of variance (MANOVA) is conducted. The various assumptions of the MANOVA are all satisfied. Using Pillai's trace, there is just not a significant effect of class on the students' perceptions of teacher feedback quality,  $V = 2.22$ ,  $F(8, 128) = 1.995$ ,  $p = .052$ . Follow-up univariate analyses are computed, but these show no significant effects of class for students' perceptions for each separate feedback type.

Matching actual oral teacher feedback with students' perceptions of teacher feedback

#### *Matching the quantity of interventions and students' perceptions*

In order to investigate the relationship between the observed quantity of interventions and the students' perceptions of the frequency of teacher information (i.e., the main research question), this last variable is recoded into a categorical variable. The categorical variable is constructed out of the same categories that indicate the amount of interventions either scored from the video material or perceived by the students.

A non-significant relationship is discovered between the amount of interventions observed and the students' perceptions of the amount of interventions Fisher's exact test = 6.53,  $p = .318$ . The quantity of teacher initiated interventions is also categorised, while it then becomes possible to also distinguish for interventions initiated by the teacher. A significant relationship is found between the number of teacher initiated interventions per group and the students' perceptions of the number of times the teacher addresses them or their group during collaborative learning, Fisher's exact test = 19.72,  $p = .005$ . Fisher's exact test is used instead of the Pearson chi-square test as ten of the cells in the contingency table (63%) have an expected count less than five.

#### *Matching the quality of actual oral teacher feedback and students' perceptions*

The relationship between the actual oral teacher feedback quality and the students' perceptions of the feedback quality is investigated. Qualitative analysis offers an insight in the difference between the quality of the actual oral teacher feedback offered and the students' perceptions of feedback quality per feedback type.

#### *Verificative teacher feedback*

Students' perceive their teachers to offer hardly any verificative teacher feedback. This type of teacher feedback is offered to almost all groups however and accounts for 22 percent of the total number of feedback offered. Correlational testing reveals a non-significant negative relationship between the actual verificative teacher feedback offered and the students' perceptions on verificative teacher feedback,  $r(71) = -.10$ ,  $p = .212$  (1-tailed). A simple regression analysis shows that actual oral verificative teacher feedback is not a significant predictor for students' perceptions of verificative teacher feedback  $\beta = -.10$ ,  $t(69) = -.80$ ,  $p = .613$ , and this variable explains a non-significant part of the variance in students' perceptions of verificative feedback  $R^2 = .009$ ,  $F(1, 69) = 0.65$ ,  $p = .424$ .

#### *Elaborative teacher feedback*

Teacher feedback that offers the students an elaboration on why for example, an answer or collaborative learning is correct or incorrect is not perceived to be given often. This type of feedback is less frequently given and over half of the collaborative learning groups are not offered elaborative feedback. Correlational analysis however

shows that the actual elaborative teacher feedback offered is not significantly correlated with students' perceptions of elaborative teacher feedback,  $r_s(75) = .02, p = .448$  (1-tailed). The test of choice is Spearman's rho, as for one variable a non-normal distribution is discovered. Simple regression reveals that the actual oral elaborative teacher feedback offered is not a significant predictor of students' perceptions of elaborative teacher feedback  $\beta = -.02, t(73) = -.18, p = .860$ . This predictor variable explains practically no part of the variance in students' perceptions of elaborative feedback  $R^2 < .001, F(1, 73) = 0.03, p = .860$ .

#### *Explanative teacher feedback*

Feedback that offers the students an explanation or a specific, directive comment is perceived quite positively by most students. Of all groups, only two groups in class 3 are not offered explanative feedback. Correlational testing however shows a non-significant relationship between the actual explanative teacher feedback and the students' perceptions of explanative teacher feedback  $r_s(75) = .15, p = .100$  (1-tailed). The non-normal distribution of one of the two variables guided the decision to use the Spearman's rho test of correlation. Simple regression analysis shows that actual oral explanative teacher feedback is not a significant predictor of students' perceptions of explanative teacher feedback  $\beta = .10, t(73) = .84, p = .406$ . It also shows the predictor variable explains a non-significant part of the variance in students' perceptions of elaborative feedback,  $R^2 = .009, F(1, 73) = 0.68, p = .406$ .

#### *Supportive teacher feedback*

Students mostly perceive to have received supportive feedback that offers them facilitative hints, examples, and questions on the learning content or process. This type of feedback is mostly offered by the teachers. Over half of the feedback received by the students is supportive and each collaborative group is offered at least once support by their teacher. However, correlational testing shows again a non-significant relationship between the actual teacher feedback and the students' perceptions. The correlation between actual supportive teacher feedback and the students' perceptions of this type of feedback is just not significant  $r(72) = .18, p = .063$  (1-tailed). Simple regression analysis shows that actual oral supportive teacher feedback is not a significant predictor of students' perceptions of supportive teacher feedback  $\beta = .18, t(70) = 1.55, p = .126$ . The actual supportive teacher feedback explains a non-significant part of the variance in students' perceptions of supportive feedback  $R^2 = .03, F(1, 70) = 2.40, p = .126$ .

#### Student characteristics and student perceptions of actual teacher feedback quality

The relationship between each of the five student characteristics and the student perceptions of teacher feedback quality is investigated by correlational analysis in order to answer the third sub question presented in this research. As theory suggests that student characteristics can influence the student perception, the influence of the five student characteristics (i.e., intrinsic goal orientation, extrinsic goal orientation, self-efficacy, help seeking, and peer learning) on student perceptions of the various feedback types is analysed by multiple regression analysis.

*Verificative feedback*

Through a multiple regression analysis with ‘student perception of verificative feedback’ as the dependent variable, it is found that the correlations between the predictor variables and this dependent variable are all quite low and all non-significant. The correlations between the five predictor variables however are also controlled for multicollinearity. The highest significant positive correlation is that between help seeking and peer learning  $r = .69, p = < .001$ , which indicates that some collinearity exists between these variables. Intrinsic goal orientation is also significantly positively correlated with all four other predictor variables, but as none of the correlations are substantial (i.e.,  $r > .8$ ) there is no substantial multicollinearity (Field, 2009). However, through multiple regression analysis no models are found that significantly predict the students’ perceptions of verificative teacher feedback.

*Elaborative feedback*

The regression coefficients from multiple regression with the dependent variable ‘student perception of elaborative feedback’ are shown in Table 8.

Table 8

*Multiple regression with ‘student perception of elaborative feedback’ as dependent variable (N = 71)*

	Unstandardized coefficients		Standardized coefficients	<i>t</i>	<i>p</i>	95% CI	<i>r</i>
	B	Std. Error	$\beta$				
Complete Model							
Constant	3.94	.75		5.24	<.001	[2.44, 5.45]	
Intrinsic goal orientation	.24	.13	.27	1.79	.078	[-0.03, 0.50]	.07
Extrinsic goal orientation	-.31	.15	-.26	-2.08	.042	[-0.60, -0.01]	-.17
Self-efficacy	-.31	.15	-.26	-2.01	.048	[-0.61, -0.002]	-.18
Help seeking	-.15	.17	-.14	-.93	.358	[-0.48, 0.18]	.06
Peer learning	.26	.16	.25	1.63	.109	[-0.06, 0.58]	.22*
Model containing only significant predictors							
Constant	4.14	.62		6.63	<.001	[2.89, 5.38]	
Intrinsic goal orientation	.29	.13	.32	2.28	.026	[0.04, 0.54]	.07
Extrinsic goal orientation	-.32	.15	-.27	-2.15	.035	[-0.61, -0.02]	-.17
Self-efficacy	-.35	.15	-.30	-2.30	.024	[-0.64, -0.05]	-.18

Note. CI = confidence interval. LB = lower bound. UB = upper bound.

\*  $p < .05$ .

Again the predictors' correlations with the outcome variable are displayed and four of these are again low and non-significant. The positive correlation between peer learning and 'students' perception of elaborative feedback' is significant however ( $r = .22, p = .034$ ). The positive correlations between the predictor variables are still significant for intrinsic goal orientation and all four other predictors, and for the positive correlation between help seeking and peer learning. Again none of the correlations exceed the threshold of .8, thus the threat of substantial multicollinearity is not present. Collinearity is also ruled out by the values of the variance inflation factor (VIF) and the Tolerance, which stay well below 10 and above .02 respectively. The assumption of independent errors is also tenable, Durbin-Watson = 1.83. Table 8 shows the first entry into the multiple regression with all five predictor variables and the model containing only significant predictors.

The five predictor variables together do explain a significant part of the students' perception of elaborative teacher feedback  $R^2 = .16, F(5, 65) = 2.44, p = .044$ . However, the confidence intervals of three predictor variables in the model cross zero (i.e., are negative as well as positive). According to Field (2009) this indicates a bad model because these predictors can have a positive relationship with the outcome in some samples, while having a negative relationship with the outcome variable in other samples.

The second model in Table 8 contains only significant predictors. This model explains a significant part of the students' perception of the dependent variable  $R^2 = .12, F(3, 67) = 3.14, p = .031$ . The predictors help seeking and peer learning thus contribute only little to the variance explained in the outcome (4%). The confidence intervals of the three significant predictors however, do not cross zero, not even the intervals from intrinsic goal orientation, which do cross zero in the complete model presented in Table 8.

#### *Explanative feedback*

For the third scale of students' perception of explanative feedback a third multiple regression is constituted. Some of the predictor variables are again significantly positively correlated. Intrinsic goal orientation is significantly correlated with all four other predictors, and help seeking and peer learning are still significantly correlated. Substantial multicollinearity can be discarded as none of the correlations exceed the threshold of .8. Collinearity is also ruled out as the values of the variance inflation factor (VIF) and the Tolerance stay well below 10 and above .02 respectively. Multiple regression analysis however, shows that there are no significant correlations between the student characteristics and the student perceptions of explanative feedback. It also reveals that none of the models significantly predict the dependent variable.

#### *Supportive feedback*

A last multiple regression analysis is conducted using 'student perception of supportive teacher feedback' as the dependent variable. Of the five predictor variables some significantly correlate with one another. The predictors help seeking and peer learning remain significantly positively correlated, as does intrinsic goal orientation and a) extrinsic goal orientation, b) self-efficacy, and c) peer learning. Multicollinearity is again not present as none of these correlations are substantially large (i.e., exceeds .8) and the VIF and Tolerance statistics stay well below 10 and above .02 respectively. The assumption of independent errors is also tenable, Durbin-Watson = 1.81. Regression coefficients from multiple regression with the dependent

variable 'student perception of supportive feedback' are shown in Table 9. The first significant model is presented as well as the model containing only the significant predictors.

As is apparent from Table 9 only the predictor peer learning is significantly correlated with the dependent variable 'student perception of supportive teacher feedback' ( $r = .21, p = .043$ ). In the first model the four predictors explain a significant part of the variance within the outcome variable  $R^2 = .15, F(4, 63) = 2.71, p = .038$ . The model is not very good, as the confidence intervals from three predictors cross zero. This is not the case for the second model. This model consists of only significant predictors and significantly also explains the variance within the outcome variable  $R^2 = .12, F(2, 65) = 4.30, p = .018$ . Still a large amount of variability within the outcome variable remains unexplained (88%). The predictors 'extrinsic goal orientation' and 'peer learning' thus contribute only a small amount of the variability explained (3%).

Table 9

*Multiple regression with 'student perception of supportive feedback' as dependent variable (N = 68)*

	Unstandardized coefficients		Standardized coefficients	t	p	95% CI	r
	B	Std. Error					
Model							
Constant	3.95	.70		5.67	<.001	[2.56, 5.34]	
Intrinsic goal orientation	.29	.14	.32	2.16	.034	[0.02, 0.57]	.14
Extrinsic goal orientation	-.12	.15	-.10	-.79	.433	[-0.42, 0.18]	-.05
Self-efficacy	-.40	.16	-.34	-2.50	.015	[-0.71, -0.08]	-.19
Peer learning	.15	.12	.14	1.17	.245	[-0.10, 0.39]	.21*
Model containing only significant predictors							
Constant	3.99	.49		8.18	<.001	[3.02, 4.97]	
Intrinsic goal orientation	.30	.12	.33	2.42	.018	[0.05, 0.55]	.14
Self-efficacy	-.42	.16	-.36	-2.67	.010	[-0.74, -0.11]	-.19

Note. CI = confidence interval. LB = lower bound. UB = upper bound.

\*  $p < .05$ .



## Discussion

### *Research results*

The present study investigates the relationship between actual oral teacher feedback and the students' perceptions of the actual oral teacher feedback during a collaborative learning assignment. It was expected that actual oral teacher feedback would at least correlate with and possibly predict the students' perceptions of actual oral teacher feedback. Furthermore, it was expected that students' characteristics had an influence on students' perceptions of teacher feedback. The actual oral teacher feedback practice during the collaborative learning assignment was investigated as were the students' experiences with collaborative learning, and their perceptions of goal clarity, teacher interventions and teacher feedback.

### *Actual teacher feedback during collaborative learning*

The results to the first research question into the quantity and quality of the actual oral teacher feedback received during collaborative learning reveal that in case of the quantity of feedback, the number of interventions during collaborative learning was different within each class. This could very well be explained by the fact in each class a different time was spent on the collaborative learning assignment. It seems plausible that as more time is spent on collaborative learning, the teacher has more opportunities to offer feedback. However, other factors than time must also contribute to the difference between classes, as the difference between class 2 and 3 is not explained by the time spent on the task. This does make it difficult to compare class 2 and 3 with class 1.

Although feedback aimed at the learning content and the learning process are both directed at aspects of the task, most attention was paid at the task process. Both teachers used their feedback to direct their students' actions. The teacher feedback was thus mostly aimed at what students in collaborative learning groups were doing and what they needed to do. This could indicate that the teachers deem the learning process to be most important in this collaborative learning environment, and altering, directing, and facilitating collaborative learning behaviour is needed in order to reach the learning goals.

When looking at feedback quality (i.e., the feedback types used by the teacher) the differences in distribution within the classes are not very distinct. The results of the study show that in all three classes verificative feedback is not given overly much when it means that the feedback comment only informs on the correctness of the task content or learning process. Verification combined with an elaboration is offered even less. It appears however that teachers are more inclined to combine a verification with either an explanation, an example, a hint or a clue. This finding is somewhat in line with other studies in which corrective feedback on task level is found to be most commonly offered (e.g., Hattie & Timperley, 2007). But, although verifications are given quite often, still more feedback is offered without a verification. This is particularly true for supportive teacher feedback. This is not quite in line with findings by Webb et al. (2006). They found that teachers when interacting with small collaborative groups provided more low-level feedback (i.e., feedback containing only a verification), while high-level feedback (i.e., feedback that contains a justification on why a response is correct, asks questions, and gives explanations sometimes providing the correct answer) was found to be only infrequently given.

In order to make students work more productively and to let them benefit from collaborative learning teachers should adapt their interventions to students' specific needs (Chiu, 2004). According to Kluger and DeNisi (1996) social talk does not seem to do this. They suggest that the effectiveness of interventions decreases as attention is focused less on the task at hand and more on the self, which social talk tends to do. Considering the operationalisation of social talk presented in Appendix D, every teacher is likely to become engaged in social talk more than once while teaching. Still this study demonstrates a great difference within the three classes when it comes to social talk. The difference between the two teachers with respect to the use of social talk could perhaps be explained by the fact that the duration of conversations between teacher and students on subjects outside the collaborative task was much longer in some classes.

#### *Student perceptions*

With respect to the first part of the second research question regarding the students' perceptions of the quantity of teacher information offered, it was found that students most likely perceived this question on the student perception of feedback questionnaire (SP\_Q) as indicating the quantity of teacher interventions (or the number of times the teacher started a conversation with their group). Most students underestimated the amount of times the teacher intervened and offered information. Only a few students overestimated the amount of teacher interventions that occurred. The original meaning of this question however was to measure the students' perceptions on the quantity of feedback offered during these interventions. This indicates a possible problem within the present study as the question on the SP\_Q is perhaps not formulated correctly and thus can be subject to misinterpretation. Also students' understandings of what feedback is are made to question.

The second half of the second research question concerns the students' perceptions of teacher feedback quality. The results of the PCA computed in this study revealed that the verification-elaboration continuum (Shute, 2008), which lies at the core of the study can safely be regarded as a relevant and proven fit to the data. Students appeared not to perceive their teachers to offer them much verificative feedback (i.e., giving only simple, general information on whether an answer or the collaborative learning is correct or incorrect). Somewhat more positive perceptions were found regarding elaborative feedback that gave, next to a verification, extra information on why for example, the answer was correct or incorrect. By far the most positive perceptions were found with respect to explanative and supportive teacher feedback.

A possible explanation for the positive students' perceptions of explanative and supportive teacher feedback could be that students when posing questions, usually ask the teacher for explanations, hints or clues. These types of feedback are thus mostly sought by students. As such, these types of feedback seem to fit the preferences and needs of the students best and students might therefore more readily perceive these types of feedback. This explanation is in line with the findings by Straub (1997) who found that students preferred teacher comments that provided advice, explanations and helpful criticism (i.e., elaboration in the form of explanative and supportive feedback) that guided revision and helped them to improve their performance. Moreover, Tsui and Ng (2000) found that specific teacher feedback that contains suggestions for revision was perceived as helpful by the students in their study.

Within this research the feedback types that offer more information (i.e., an elaboration) can also contain a verification. Elaborative feedback for example always includes a verification, but always with additional information. Explanative and supportive feedback can also include a verification, but this is not necessary. As such, verifications are also presented as part of a larger explanation or example given. According to Sadler (1998) the teacher's view of assessment and feedback practice also has an influence on students' perceptions of assessment and feedback. It could be that the teachers are accustomed to for example, offer explanative and supportive feedback during collaborative learning while offering specific verificative and elaborative feedback mostly after assessment. If this is the case, students may be more perceptive of explanative and supportive feedback during collaborative learning, while they recognize verificative and elaborative feedback more when offered after assessment.

#### *Matching teacher feedback and student perceptions*

The main research question in this study regards the match or mismatch between actual oral teacher feedback and students' perceptions of this teacher feedback. In this study a relationship was found between the actual number (i.e., quantity) of teacher interventions and the students' perceptions of the frequency with which the teacher spoke to them or their group. This indicates that the students have a fair indication of how many times the teacher's attention was directed at their group. There appears to be a match between teacher feedback quantity (i.e., in the form of teacher initiated interventions) and students' perceptions of teacher feedback quantity.

The relationship between the feedback quality (i.e., the type of feedback offered) and the students' perceptions of the feedback quality was found to be very weak. The presence of actual verificative teacher feedback thus did not correlate with the students' perceiving this type of feedback being offered by the teacher. The same non-significant correlations were found for elaborative feedback, explanative, and supportive feedback. These findings coincide with other studies on student views of teacher feedback, which are limited by a weak relationship between student perceptions of teacher feedback and actual teacher feedback in specific contexts (e.g., Chanock, 2000; Montgomery & Baker, 2007; Lee, 2008).

Further analysis showed, as was expected after finding correlations that were weak, that teacher feedback was not a significant predictor of student perceptions, with regard to the feedback quality. Thus, no match was found between teacher feedback quality and students' perceptions of teacher feedback quality. This is in line with previous research (e.g., Lee, 2008; Montgomery & Baker, 2007), but goes against the common sense assumption that students' perceptions of actual teacher feedback would be dependent on the actual teacher feedback offered.

An explanation for this could be that although the students mentioned to be experienced in working in small collaborative groups, they may not have had experience with the specific kind of collaborative learning assignment used in this study. If this was indeed a novel task, it could be that this lack of experience impeded the students by not having a clear standard against which to compare the teacher feedback received (Kluger & DeNisi, 1996). Also, predefined goals and standards must be clear for learning improvement to be attained by feedback (e.g., Earley et al., 1990; Hattie and Timperley, 2007; Sadler, 1989). The results of this study show that most students in the three classes perceived the goals of the assignment to be clear. In one class however a considerable amount of students disagreed or were indecisive of the goals of the assignment being clear.

Another possible explanation for the mismatch found between feedback quality and the students' perceptions of feedback quality is that teacher feedback quality is perhaps too difficult for students to perceive. An explanation for this can be that as students' needs seem to be answered best by explanative and supportive teacher feedback, students are more inclined to actually perceive only these types of feedback. According to Higgins (2000) it could also be that students' workloads may impair student reflection time on teacher feedback comments, but mostly students are just unable to understand feedback comments and will thus interpret them wrongly. Even written feedback is often difficult to understand for students (Lee, 2008) and this is feedback which can be revisited and be reread frequently in order to gain understanding. With oral feedback there is no such option available to the student. Future research should however make this option available to the student, if only for the sake of better investigating the match between teacher feedback and student perceptions, by using for example, the method of stimulated recall.

Stimulated recall (SR) could offer a profound insight into the relationship between beliefs and actions, although it must be noted that this method is very time consuming and labour intensive (Meade & McMeniman, 1992). Stimulated recall is a procedure for examining cognitive processes underlying classroom actions by inviting participants to recollect their concurrent thinking during a specific event, when they are prompted by that event in a video sequence (Lyle, 2003). Students can experience again the moment when the teacher offers the feedback and a) can perceive very clearly what the teacher says, b) can take the actual time to perceive this feedback as belonging to a certain type, and c) can recollect their own reasons for perceiving this feedback the way they do.

A final reason for the mismatch between teacher feedback quality and students' perceptions of teacher feedback quality could be that student perceptions are not so much influenced by what is perceived, but more by other internal student factors such as student characteristics (e.g., Ilgen et al., 1979), which is why this study also investigated the relationship between several student characteristics and students' perceptions.

#### *Student characteristics and student perceptions*

The last research question considers the possible influence of student characteristics on the students' perceptions of teacher feedback quality. It was found that the student characteristic peer learning was the only predictor to have a significant positive relationship with students' perceptions of both elaborated and supportive feedback. This is somewhat in line with theories on peer learning as students who help each other learn are expected to benefit from elaborated help (Webb et al., 2002). However, interestingly students' perceptions of explanative teacher feedback are not significantly correlated with peer learning, while this type of feedback also offers an elaboration as do elaborated and supportive feedback. The relationship is positive however, but this is also true for the relationship between peer learning and the students' perceptions of verificative feedback. It was found that students with a goal orientation that is more intrinsic perceived themselves to receive more elaborative, explanative, and supportive feedback. This last finding is in line with the study by Noels et al. (1999) that found that a student's intrinsic motivation was indeed related to the student's perception of the teacher feedback as being informative. It can be concluded therefore that students who are intrinsically motivated pay attention to the teacher feedback and recognize the teacher feedback as being informative, thus being able to use it for their benefit.

This study found that the student characteristics help seeking and peer learning had a significantly positive relationship. Out of all student characteristics, these two characteristics correlated highest with one another. This does not seem surprising as according to Webb et al. (1995, p. 406) “a primary motivation for putting students into groups is the opportunity for students to help each other learn”, and this can be attained by “giving and receiving help”. Intrinsic goal orientation was also significantly related to the other student characteristics. This characteristic had a positive relationship with extrinsic goal orientation, help seeking, and peer learning, although the relationship with help seeking was no longer significant when conducting the multiple regression with the outcome variable ‘students’ perceptions of supportive feedback’.

The student characteristics were found to explain the students’ perceptions of both elaborative and supportive teacher feedback, which is in line with other studies (e.g., Ilgen et al., 1979). Only a small percentage of the students’ perceptions of elaborative feedback and supportive feedback is explained by five and four student characteristics respectively. A large amount of variability within the outcome variable is thus still unaccounted for. It can be concluded therefore that although student characteristics do influence students’ perceptions, other factors play a far more important part in influencing the students’ perceptions of these types of teacher feedback.

Future research is needed to investigate the exact nature of these factors. It could be that students’ beliefs and conceptions (Könings, 2007), or students own learning preferences and learning habits (Vermetten et al., 2002) play a far greater and more important role in effecting students’ perceptions. It could also be that environment-related characteristics influence students’ perceptions more (Luyten et al., 2001). The influence of student characteristics although small, should not be discarded in future research however.

#### *Methodological limitations*

The student perceptions of feedback questionnaire (SP\_Q) was newly developed for this study. The answering scale used in both part A and part D of the SP\_Q (i.e., a five-point Likert scale ranging from I disagree to I agree) was adapted from the SAFL\_Q by Pat-El et al. (2011). When analysing the results, this scale appeared to be somewhat difficult to interpret. If students agree or disagree with a proposition, the students seem to either perceive or not to perceive their teachers to offer them a certain type of oral teacher feedback. If students somewhat agree or disagree with the proposition, it can mean that they do or do not perceive the teacher to have offered them that kind of feedback, but that they are not very sure. An ‘unsure’ answer or in this case perception is difficult to interpret.

The use of this particular scale could be a reason for the very low correlations that were found between actual oral teacher feedback and students’ perceptions of teacher feedback. However, although this could very well influence the low level of the correlations, the correlations found in this study are so low that even with a more readily interpretable scale the correlations would probably still be very low indeed. This indicates that the relationship between actual oral teacher feedback and students’ perceptions is very weak. A preliminary study could have pointed out this problem. In subsequent research this problem could be remedied by using either a different answering scale or using different questions that better fit the answering scale used. Some questions on the SP\_Q also appeared difficult to interpret for the students. Students appeared to have difficulties distinguishing between interventions and

feedback comments offered during an intervention. It is important for future research to take this into account.

Another limitation was that the number of classes participating in this study was quite small. This makes it difficult to make statistically sound comparisons between the classes. Comparisons between classes must also be done with care as the conditions within the three classes in the study were different. Of the three classes, class 3 harboured 30 students, which is a considerable larger group than the 24 and 23 students in class 1 and 2 respectively. Although every class had the same amount of time for each lesson, not every class spent an equal amount of time on the collaborative learning assignment. In class 1 a far larger amount of time was spent working on the collaborative learning assignment. Class 2 and 3 spent almost the same amount of time on the assignment however. While in class 3 it took longer to form the collaborative groups and create silence before the collaborative work could start, in class 2 teacher 2 was able to establish order quite quickly, but a lot of time was spent on forming the collaborative groups.

This is not strange as the heterogeneous small collaborative groups were composed slightly different in class 2 compared to class 1 and 3. While the students in each class were assigned a token based on their average history grade, only the students in class 2 were actually given an individual token (i.e., a coloured piece of paper in a particular shape). These students were free to a) form a dyad with another student of their own choice who held a different coloured token, and b) to join another dyad, thus forming a group of four and in one case a group of three students. Eventually the teacher did intervene somewhat in constructing the groups, ordering a slightly different group formation in some cases. In both class 1 and 3 however, the teacher requested the formation of the groups to be predefined by the researcher, as not all students were not to be trusted to form groups in which effective learning was to take place. The groups were therefore predefined and presented to the students on the white board. The teacher did have the opportunity to alter the groups beforehand, but this did not appear to be necessary.

These methodological limitations do make it hard to compare the teacher feedback practice between the three classes as the collaborative learning situations in the classes were not completely equal. As the context in which the study was conducted (i.e., collaborative learning in university preparatory secondary history education) is very specific and the number of participants in the study was quite small, caution must be exerted where external validity is concerned (Van de Watering et al., 2008). Especially as according to Lee (2008, p. 146) students' perceptions of teacher feedback "are influenced by the instructional context in which the feedback is delivered". Moreover, not only students' perceptions are domain specific, but the students' characteristics are also unstable (Könings, 2007) and effected by the specific learning environment (e.g., Boekaerts, 2002; Vermetten et al., 1999). Any generalisation of the results in this study should therefore be limited to university preparatory secondary history education.

The context thus has a great influence on the outcomes in this study. The context however is not only constituted by the particular school and its history curriculum, but as can be seen from this study, even more by the classroom environment, the teacher, and the students in the class. While teaching style and the teacher's attitudes could possibly influence the students' perceptions, so could the peers with whom a student works together in a group. Subsequent research should take these factors into account. The student's own learning characteristics are proven to influence their perceptions to a certain degree. The above show that the data in this

study is thus nested, and subsequent research using the same type of data should use multilevel analysis in order to better analyse the data. The various contextual variables in this study introduce dependency in the data (Field, 2009), which should not be discarded in future research. In order to do a multilevel analysis however, subsequent research should include more participants.

Figure 1, introduced in the introduction in this thesis, presents the central variables in this research project. The main aim of this study was to explore the match between actual oral teacher feedback and students' perceptions of actual oral teacher feedback within a collaborative learning environment. Both the quantity and quality of the teacher feedback and the students' perceptions of teacher feedback quantity and quality were investigated. Finally, Figure 1 also introduces the students' characteristics as another variable taken into account in this thesis.

In this research it was found that within classes a great difference can be found in the quantity of interventions made during collaborative learning. During these interventions the teachers offer mostly elaborated, that is informative feedback. Of the elaborated feedback offered, the largest part was supportive feedback facilitating student learning by asking the students questions and giving them clues. Students were found to correctly perceive the quantity of teacher initiated interventions, and a match was found between the quantity of teacher initiated interventions and students' perceptions of this quantity. The quality of teacher feedback (i.e., the various teacher feedback types) offered was more difficult to perceive however. Explanative and supportive teacher feedback was mostly perceived to be given, but no match was found between the quality of actual oral teacher feedback and the students' perceptions of actual oral teacher feedback quality. Teacher feedback was not found to explain the students' perceptions of teacher feedback. Student characteristics were found to explain a very small portion of the variability of the students' perceptions of elaborative and supportive teacher feedback.

### *Implications*

This study demonstrates that there is a match between the number of teacher initiated interventions and the students' perceptions of the frequency of teacher information. A mismatch was found however between actual oral teacher feedback types and the students' perceptions of feedback types. Rightly perceiving the quality of teacher feedback appears to be difficult, especially during a collaborative learning assignment. Students' characteristics were found to influence part of the students' perceptions of teacher feedback. Nonetheless a very large part of the variability in students' perceptions of teacher feedback remains unexplained. Other factors explain and exert a greater influence on the students' perceptions. The findings of this study thus suggest that teachers should be aware that multiple factors can contribute to the perceptions students have of the information that is offered to them. This could very well include the teachers' own views, characteristics, and teaching styles, next to students' beliefs and conceptions.

The findings offer each of the teachers an insight into their own feedback practice during collaborative learning and the nature of the student-teacher interactions. This study also shows the teachers the possibilities for teacher feedback practice, as feedback can very well be used to improve student learning during collaborative learning. Students can then learn from feedback immediately while working on the assignment. More important perhaps is that the students can be made aware, just as their teachers can be, that feedback is not necessarily something that is used only when formally assessing an assignment.

Although the types of feedback offered are hardly recognized by students, it is the feedback message that counts and needs to come across. Mismatching perceptions can impede the feedback practice as through misunderstanding and misinterpretation by students (e.g., Chanock, 2000; Norman, 1986) teachers' objectives for the teacher feedback may fail. As students mostly perceived their teachers to give feedback which explains and supports, this feedback could be the one type of feedback that is most needed by the students. The students' needs must be taken into account when offering teacher feedback, especially in relation to the goals and standards of the assignment, which must be clear.



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## Appendix A: Students' characteristics questionnaire in Dutch

Start met het invullen van de volgende gegevens:

Leeftijd: ..... Jongen / Meisje (Omcirkel het juiste antwoord)

Leerlingcode:

Toelichting: 1<sup>e</sup> vakje: De eerste letter van je voornaam.  
2<sup>e</sup> vakje: De eerste letter van je achternaam.  
3<sup>e</sup> en 4<sup>e</sup> vakje: De maand waarin je bent geboren, in twee cijfers.  
5<sup>e</sup> en 6<sup>e</sup> vakje: De eerste twee cijfers van je huisnummer.

Voorbeeld:  R  N  0  3  0  5 **Roxanne van Noort**, geboren in Maart (**03**), Huisnummer 5 (**05**).



Geef eerst antwoord op deze twee vragen:

Heb jij al eens eerder bij het vak geschiedenis in groepjes samengewerkt aan een opdracht?  
Nooit / Soms / Regelmatig (Omcirkel het juiste antwoord)

Heb jij bij andere vakken al eens in groepjes samengewerkt aan een opdracht?  
Nooit / Soms / Regelmatig (Omcirkel het juiste antwoord)

#### Uitleg vragenlijst

Deze vragenlijst bevat 23 vragen. De stellingen hieronder gaan allemaal over het vak geschiedenis, dus denk bij het beantwoorden van de stelling aan geschiedenis. De vragen gaan onder andere over wat jij belangrijk vindt bij het vak geschiedenis en hoe makkelijk of moeilijk jij het vak vindt. Er zijn geen foute antwoorden, dus vul de vragen zo eerlijk mogelijk in. Alle antwoorden zijn anoniem.

Lees elke stelling goed en zet dan een cirkel om het nummer dat het beste bij jouw antwoord past. Let op: je mag per stelling maar 1 antwoord omcirkelen, je zult dus een keuze moeten maken. Er zijn vijf keuzemogelijkheden. Is een stelling voor jou bijvoorbeeld **soms** waar, maar niet altijd, omcirkel dan antwoord 4 'Soms waar voor mij'. Is een stelling voor jou bijvoorbeeld helemaal nooit waar, zet dan een cirkel om antwoord 1 'Altijd niet waar voor mij'.

Voorbeeld:

		Altijd niet waar voor mij	Soms niet waar voor mij	Niet waar & niet onwaar voor mij	Soms waar voor mij	Altijd waar voor mij
A.	Als ik voor geschiedenis leer dan schrijf ik mijn aantekeningen over. Zo onthoud ik de lesstof beter.	1	2	3	4	5

Als jij soms je aantekeningen overschrijft tijdens het leren om de geschiedenisstof beter te onthouden, maar niet altijd, dan omcirkel je antwoord 4 'Soms waar voor mij'.

**De vragenlijst begint op de volgende pagina.**

**Nu begint de echte vragenlijst. Veel succes!**

		Altijd niet waar voor mij	Soms niet waar voor mij	Niet waar & niet onwaar voor mij	Soms waar voor mij	Altijd waar voor mij
1.	Ik werk samen met klasgenoten om de opdrachten bij geschiedenis af te maken.	1	2	3	4	5
2.	Als het kan wil ik voor geschiedenis betere cijfers halen dan de meeste andere leerlingen.	1	2	3	4	5
3.	Als ik leer voor geschiedenis, neem ik de tijd om met klasgenoten de stof te bespreken.	1	2	3	4	5
4.	Als ik kijk naar hoe moeilijk het vak geschiedenis is, welke docent ik heb en wat ik zelf kan, denk ik dat ik het goed zal doen bij geschiedenis.	1	2	3	4	5
5.	Als ik de stof niet begrijp vraag ik een andere leerling in de klas mij te helpen.	1	2	3	4	5
6.	Ik denk dat ik het goed ga doen bij geschiedenis.	1	2	3	4	5
7.	Als ik leer voor geschiedenis, probeer ik de stof vaak aan een klasgenoot of vriend uit te leggen.	1	2	3	4	5
8.	Als ik de kans krijg kies ik tijdens geschiedenis opdrachten waarvan ik kan leren, zelfs als ik niet zeker weet of ik hiervoor een goed cijfer ga halen.	1	2	3	4	5
9.	Ik weet zeker dat ik de basisbegrippen bij geschiedenis kan begrijpen.	1	2	3	4	5
10.	Ik weet zeker dat ik de opdrachten en toetsen bij geschiedenis heel goed ga maken.	1	2	3	4	5
11.	Als ik iets niet goed begrijp vraag ik de docent om uitleg.	1	2	3	4	5
12.	Het liefst krijg ik bij geschiedenis interessante stof, ook al is het lastiger om deze stof te leren.	1	2	3	4	5
13.	Een goed cijfer halen voor geschiedenis vind ik het belangrijkste.	1	2	3	4	5



		Altijd niet waar voor mij	Soms niet waar voor mij	Niet waar & niet onwaar voor mij	Soms waar voor mij	Altijd waar voor mij
14.	Ik wil het goed doen bij geschiedenis, omdat ik het belangrijk vind om aan mijn familie en vrienden te laten zien wat ik kan.	1	2	3	4	5
15.	Ik weet zeker dat ik de moeilijkste stof die de docent mij geeft kan begrijpen.	1	2	3	4	5
16.	Zelfs als ik bij geschiedenis moeite heb met leren probeer ik zelf te leren, zonder de hulp van anderen.	1	2	3	4	5
17.	Ik weet zeker dat ik de vaardigheden die mij worden geleerd in de geschiedenislessen goed ga beheersen.	1	2	3	4	5
18.	Ik weet zeker dat ik de lastigste stof uit het geschiedenisboek kan begrijpen.	1	2	3	4	5
19.	Ik kijk welke leerlingen in de klas ik om hulp kan vragen als dat nodig is.	1	2	3	4	5
20.	Ik denk dat ik een goed cijfer zal halen voor geschiedenis.	1	2	3	4	5
21.	Bij geschiedenis wil ik graag uitdagende stof, zodat ik nieuwe dingen kan leren.	1	2	3	4	5
22.	Het belangrijkste is dat ik mijn gemiddelde cijfer verbeter, dus ik wil vooral goede cijfers halen voor geschiedenis.	1	2	3	4	5
23.	Als ik in de geschiedenisles de stof door en door begrijp ben ik echt tevreden.	1	2	3	4	5

**Dit is het eind van de vragenlijst, bedankt voor het invullen!  
Controleer of alle vragen zijn ingevuld en leg de vragenlijst op de hoek van je tafel.**

## Appendix B: Students' perceptions questionnaire in Dutch



Start met het invullen van de volgende gegevens:

Leeftijd: .....

Jongen / Meisje (Omcirkel het juiste antwoord)

Leerlingcode:

1<sup>e</sup> vakje: De eerste letter van je voornaam.  
 2<sup>e</sup> vakje: De eerste letter van je achternaam.  
 3<sup>e</sup> en 4<sup>e</sup> vakje: De maand waarin je bent geboren in twee cijfers.  
 5<sup>e</sup> en 6<sup>e</sup> vakje: De eerste twee cijfers van je huisnummer.

Groepsnaam (neem over van het antwoordvel bij de opdracht): .....

#### Uitleg vragenlijst

Deze vragenlijst bestaat uit 4 delen. Alle delen gaan over de opdracht die je net hebt gemaakt met je groepje en wat jouw docent tijdens het werken aan de opdracht heeft gezegd tegen jou of je groepje. Er zijn geen foute antwoorden, dus vul de vragen zo eerlijk mogelijk in. Alle antwoorden zijn anoniem.

Bij de stellingen in Deel A en D, zet je een cirkel om het nummer dat het beste bij jouw antwoord past. Let op: je mag per stelling maar 1 antwoord omcirkelen, je zult dus een keuze moeten maken. Er zijn vijf keuzemogelijkheden. Ben jij het een beetje eens met de stelling, maar niet helemaal, omcirkel dan antwoord 4 'Beetje mee eens'. Ben jij het echt niet eens met de stelling, zet dan een cirkel om antwoord 1 'Niet mee eens'.

Voorbeeld:

		Mee oneens	Beetje mee oneens	Niet mee eens & niet mee oneens	Beetje mee eens	Mee eens
A.	De docent moedigde ons aan meer ons best te doen.	1	2	3	4	5

Als de docent jullie tijdens de opdracht heeft aangemoedigd om meer jullie best te doen, omcirkel dan keuze 5 'Mee eens'.

Bij Deel B en C, moet je een vinkje zetten achter jouw goede antwoord.

Voorbeeld: *Hoe vaak heb jij iets aan een andere leerling in je groepje gevraagd?*

0 keer (Nooit)	✓
1 of 2 keer (Soms)	
3 of 4 keer (Regelmatig)	
5 of meer keer (Vaak)	

Als jij geen enkele keer aan een andere leerling in je groepje iets hebt gevraagd, vink dan het eerste antwoord '0 keer (Nooit)' aan.

**De vragenlijst begint op de volgende pagina. Sla de bladzijde om.**

**Nu begint de echte vragenlijst. Veel succes!**

Deel A. Omcirkel bij elke vraag één juist antwoord.

		Mee oneens	Beetje mee oneens	Niet mee eens & niet mee oneens	Beetje mee eens	Mee eens
1.	Tijdens het maken van de opdracht kon ik vragen stellen.	1	2	3	4	5
2.	Het was mij duidelijk hoe ik deze opdracht moest maken.	1	2	3	4	5
3.	Het was duidelijk wat ik van deze opdracht kon leren.	1	2	3	4	5
4.	Ik wist wat ik moest doen om deze opdracht goed te maken.	1	2	3	4	5
5.	Bij deze opdracht heb ik laten zien wat ik kan.	1	2	3	4	5

Deel B. Vink één juist antwoord aan. Hoe vaak heeft de docent iets tegen jou of je groepje gezegd tijdens het werken aan de opdracht?

0 keer (Helemaal niet)	
1 of 2 keer (Soms)	
3 of 4 keer (Regelmatig)	
5 of meer keer (Vaak)	

**Is jouw antwoord 1 of 2, 3 of 4, of meer dan 5 keer, ga dan door met Deel C.**

Is jouw antwoord 0 keer (Helemaal niet), dan is dit het einde van de vragenlijst. Leg de vragenlijst op de hoek van je tafel. Bedankt voor het invullen van de vragenlijst!

Deel C. Vink één juist antwoord aan. Tegen wie heeft de docent iets gezegd tijdens het werken aan de opdracht?

a.	<b>Alleen</b> tegen jou.	
b.	<b>Alleen</b> tegen je hele groepje (dus tegen iedereen in je groepje).	
c.	<b>Alleen</b> tegen andere leerlingen uit je groepje (en niet tegen jou).	
d.	Tegen jou én tegen andere leerlingen uit je groepje.	
e.	Tegen jou én tegen je gehele groepje.	
f.	Tegen jou, tegen andere leerlingen uit je groepje én tegen je gehele groepje.	

**Ga door naar het laatste deel, deel 4, op de volgende bladzijde.**

Deel D. Lees de stelling en omcirkel steeds één juist antwoord. Wat heeft de docent allemaal gezegd tegen jou, anderen in je groepje of jouw hele groepje **tijdens het maken van de opdracht?**

		Mee oneens	Beetje mee oneens	Niet mee eens & niet mee oneens	Beetje mee eens	Mee eens
1.	De docent gaf uitleg als daarom werd gevraagd.	1	2	3	4	5
2.	De docent gaf aanwijzingen die hielpen om de opdracht te begrijpen.	1	2	3	4	5
3.	De docent vertelde dat er goed of niet goed werd samengewerkt <b>en gaf ook aan waarom.</b>	1	2	3	4	5
4.	De docent vertelde <b>alleen</b> of er goed of niet goed werd samengewerkt.	1	2	3	4	5
5.	De docent stelde vragen die hielpen om de opdracht te begrijpen.	1	2	3	4	5
6.	De docent heeft het doel van de opdracht nogmaals verteld.	1	2	3	4	5
7.	De docent vertelde <b>alleen</b> dat het gegeven antwoord goed of fout was.	1	2	3	4	5
8.	De docent vertelde dat het gegeven antwoord goed of fout was <b>en gaf ook aan waarom.</b>	1	2	3	4	5
9.	De docent heeft gezegd wat er moet worden verbeterd om de opdracht goed te maken.	1	2	3	4	5
10.	De docent heeft gezegd wat de sterke punten waren van het antwoord dat we al hadden.	1	2	3	4	5
11.	De docent heeft uitleg gegeven over hoe je hoort samen te werken.	1	2	3	4	5
12.	De docent heeft gezegd wat de zwakke punten waren van het antwoord dat we al hadden.	1	2	3	4	5

**Dit is het eind van de vragenlijst, bedankt voor het invullen!**

**Controleer of alle vragen zijn ingevuld en leg de vragenlijst op de hoek van je tafel.**

## Appendix C: Collaborative learning assignment in Dutch

**Samenwerkingsopdracht****Bij het hoofdstuk over de Industriële Revolutie**

Jullie hebben al geleerd over de arbeidsomstandigheden van volwassenen én kinderen in de fabrieken ten tijde van de Industriële Revolutie. De volgende opdracht gaat over de redenen die fabrikanten en arbeiders hadden om kinderen in de fabrieken te laten werken, én over de redenen die er zijn voor en tegen de afschaffing van de kinderarbeid. Samen met je groepsgenoten ga je antwoord geven op een aantal vragen.

**Na het maken van deze opdracht kun je:**

- In overleg met je groepsgenoten uit meerdere bronnen informatie halen en deze informatie gebruiken in het antwoord op de vragen.
- Samen met je groepsgenoten een onderbouwd antwoord formuleren op elke vraag, waarbij je de bronnen noemt die jullie hebben gebruikt.
- Tenminste twee verschillende redenen (uit twee verschillende bronnen) noemen die fabrikanten hadden om kinderen in de fabrieken te laten werken.
- Tenminste twee verschillende redenen (uit twee verschillende bronnen) noemen die de ouders van kinderen hadden om hun kinderen in de fabrieken te laten werken.
- Verschillende redenen noemen vóór en tegen de afschaffing van de kinderarbeid.

## **Opdracht**

### Bij bronnenset

**Lees eerst zelf** de bronnen in de bronnenset, let daarbij op de volgende punten:

1. Welke redenen hebben de fabrikanten om kinderen in hun fabriek te laten werken?
2. Welke redenen hebben de ouders om hun kinderen in de fabrieken te laten werken?
3. Welke redenen worden genoemd vóór en tégen de afschaffing van kinderarbeid?

**Als je alle bronnen hebt gelezen, haal dan samen met je groepsgenoten de hoofdzaken uit de bronnen.** Schrijf deze hoofdzaken kort op, op het aantekeningenvel bij deze opdracht. Overleg steeds met je groepsgenoten over wat je noteert: help elkaar de hoofdzaken uit de bronnen te halen.

**Als jullie de hoofdzaken uit de bronnen hebben gehaald formuleer dan met jouw groepje een antwoord op de vragen.** Schrijf het antwoord van jouw groepje op jouw eigen antwoordvel bij deze opdracht.

## Bronnenset

### Bij opdracht

#### Bron 1 De noodzaak van kinderarbeid

Tijdens de Industriële Revolutie vond in Groot-Brittannië een enorme toename van productie plaats, waardoor de vraag naar arbeid steeg. Fabriekseigenaren waren op zoek naar goedkope, kneedbare en snel lerende werkkrachten. Deze vonden zij in de kinderen uit de stedelijke arbeiderswijken. De kinderen kregen geen loon en werden slechts gevoed en gehuisd.

Werkte in de 18de eeuw nog maar 35 procent van de tienjarige jongens uit de arbeidersklasse, in de periode tussen 1791 en 1820 steeg dit aantal met 55 procent. Tussen 1821 en 1850, toen de industrialisatie versnelde, was er sprake van een stijging van 60 procent.

Behalve de stijgende vraag was er volgens Humphries nog een andere oorzaak voor de toenemende kinderarbeid, namelijk de afwezigheid van de vaders in veel Britse gezinnen. Tijdens de 18e eeuw vielen steeds meer families uit elkaar. Door oorlogen, de opbouw van het Britse imperium en de arbeidsmobiliteit waren mannen vaak ver van huis of sneuvelden. Hierdoor werden moeders gedwongen hun kinderen te laten werken.

(Informatie uit onderzoek van J. Humphries, professor economische geschiedenis in Oxford, Engeland)

#### Bron 2 Stoommachine maakt werk makkelijk



Voordat er stoommachines waren, bediende een wever met de hand één weefgetouw. In 1852 werd de eerste weverij met een stoommachine gesticht in Almelo. Een alleen werkende wever kon nu twee mechanische getouwen tegelijk bedienen. Samen met een kind was het zelfs mogelijk vier getouwen tegelijk te bedienen. Bediende de wever twee getouwen, dan kreeg hij drie gulden loon. Waren het er vier dan was het loon het dubbele. Vader en kind konden dus samen met zes gulden per week thuis komen. In 1890 hield wever Frans Weltevreden zelfs zes getouwen aan de gang.

Hij schreef: "Ik sta tussen mijn beiden kinderen in, een jongen van 16 en een meisje van 13 jaar. De jongen, die flink en vlug werkt, behandelt 2 getouwen; ik houd echter toezicht op alle zes getouwen en wij helpen zoo elkander."

**Bron 3** Gezondheid in de fabrieken

(Kinderarbeid in een glasfabriek in Engeland in 1908, gemaakt door Lewis Hine)

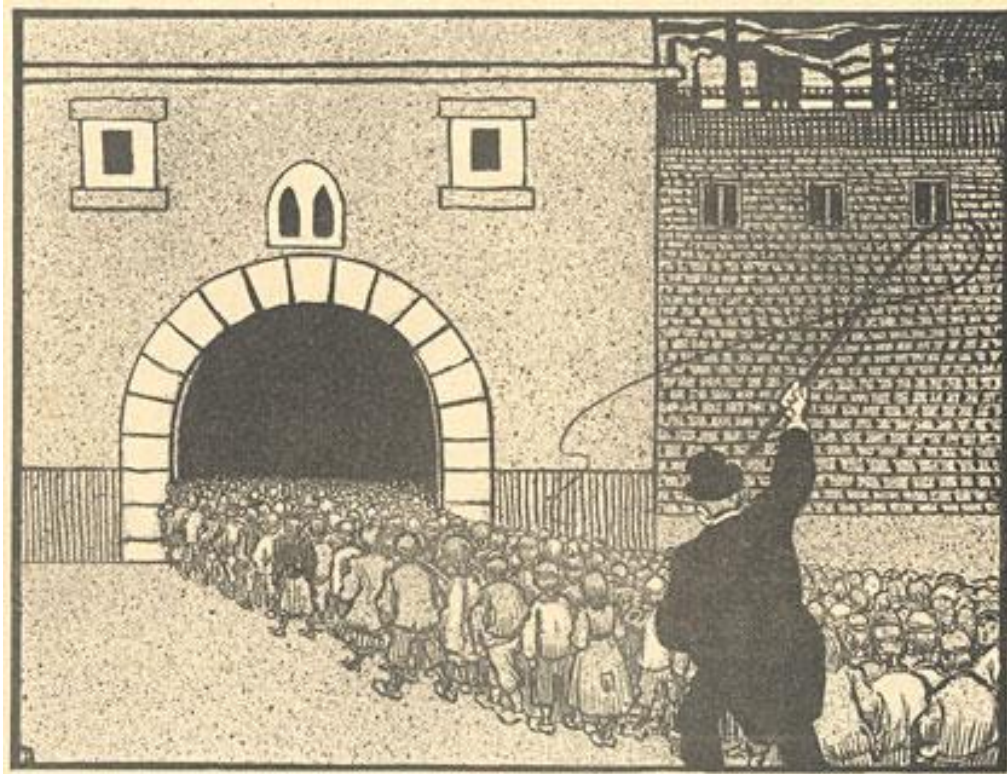
**Bron 4** De zijdefabrikant

Samuel Courtauld was voor sociale hervorming. Toch was hij tegen de Fabriekswet van 1833, met als argument: Wetgeving die zich bemoeit met de bedrijfsvoering van fabrieken is altijd slecht omdat het vernieuwingen tegenhoudt en productiekosten verhoogt. Als het parlement al met wetgeving wilde komen dan moest het zich beperken tot het beschermen van kinderen onder de tien jaar. Wetgeving was volgens Courtauld alleen aanvaardbaar als aangetoond kon worden dat kinderen slecht werden behandeld, maar dit was in de zijde-industrie niet het geval. "Geen enkel kind in de buurt", zo meende hij, "is zo gezond als de kinderen in de fabrieken." Courtauld was net als alle zijdeproducenten sterk afhankelijk van zijn jonge vrouwelijke arbeiders. In 1838 bestond 92 % van zijn arbeiders uit vrouwen. Het hoge percentage vrouwelijke arbeidskrachten hielp de loonkosten laag te houden. Terwijl volwassen mannen 7 shilling en 2 dime verdienden, kregen vrouwen minder dan 5 shilling. Het goedkoopst waren de meisjes onder de elf jaar die slechts 2 shilling en 5 dime per week kregen.

**Bron 5** Kind in de fabriek

"Het ging steeds slechter met mijn vader. De baas kreeg het in de gaten. Hij wilde mijn vader ontslaan. Maar toen zei hij: "Je mag blijven, maar dan moet je wel je kinderen meenemen". We waren thuis met z'n negenen. Kinderen verdienden niet veel geld. Het waren de goedkoopste arbeiders. "Dank u wel meneer", zei mijn vader. Zo kwam ik als jongetje van tien in de fabriek. Ik stond naast mijn vader. Hij leerde mij het vak."



**Bron 6** Een Nederlandse wet tegen kinderarbeid

In de negentiende eeuw veroorzaken industrialisatie, bevolkings- en stedengroei sociale problemen. Voor land- en fabrieksarbeiders zijn werkdagen van twaalf uur geen uitzondering. Niet alleen volwassenen (mannen én vrouwen) maken lange dagen, ook kinderen. In 1874 moet de Kinderwet van Van Houten hier verbetering in brengen.

*De Wet van 19 september 1874, houdende maatregelen tot het tegengaan van overmatigen arbeid en verwaarlozing van kinderen*, verbiedt kinderen tot 12 jaar in fabrieken te werken. Zij mogen nog wel thuis en op het veld werken. Oudere kinderen zijn daarmee niet aan werken ontsnapt. De controle op de naleving van de wet is gebrekkig, zodat kinderarbeid in de praktijk nog veel blijft voorkomen. De invoering van de leerplicht in 1901 brengt hier, zo'n vijftig jaar later, pas verbetering in.

Deze wet was bedacht door het liberale kamerlid Samuel van Houten, wat opmerkelijk was omdat de liberalen wel voor kinderarbeid waren. De liberalen, die de regeringen na 1848 domineerden, waren tegen de inperking van de vrijheid van ondernemers, dus ook tegen wetgeving tegen kinderarbeid. Bovendien zagen zij de goedkope arbeid van kinderen als een manier om te kunnen concurreren met het buitenland.

**Einde bronnenset.**

Groepsnaam: .....

**Vel voor aantekeningen bij deze opdracht**

Haal samen met je groepsgenoten de hoofdzaken uit de bronnen. Gebruik deze pagina eventueel voor **korte** (!) aantekeningen

<p><b>bron 1</b> Redenen fabrikanten (voor kinderen in fabriek):</p> <p>Redenen ouders (voor kinderen in fabriek):</p> <p>Redenen vóór of tégen afschaffing kinderarbeid:</p>	<p><b>bron 2</b> Redenen fabrikanten:</p> <p>Redenen ouders:</p> <p>Redenen vóór of tégen afschaffing kinderarbeid:</p>
<p><b>bron 3</b> Redenen fabrikanten:</p> <p>Redenen ouders:</p> <p>Redenen vóór of tégen afschaffing kinderarbeid:</p>	<p><b>bron 4</b> Redenen fabrikanten:</p> <p>Redenen ouders:</p> <p>Redenen vóór of tégen afschaffing kinderarbeid:</p>
<p><b>bron 5</b> Redenen fabrikanten:</p> <p>Redenen ouders:</p> <p>Redenen vóór of tégen afschaffing kinderarbeid:</p>	<p><b>bron 6</b> Redenen fabrikanten:</p> <p>Redenen ouders:</p> <p>Redenen vóór of tégen afschaffing kinderarbeid:</p>

Groepsnaam: .....
-------------------

### Antwoordvel bij deze opdracht

Geef nu met je groepje antwoord op de vragen. Overleg over het beste en meest complete antwoord. Noteer achter het antwoord op welke bronnen jullie het antwoord baseren.

1. Noem tenminste twee redenen (uit verschillende bronnen) die de fabrikanten hebben om kinderen in hun fabriek te laten werken.
--

2. Noem tenminste twee redenen (uit verschillende bronnen) die de ouders hebben om hun kinderen in de fabrieken te laten werken.
--

3. Noem tenminste twee redenen die worden genoemd vóór de afschaffing van kinderarbeid en noem tenminste twee redenen die worden genoemd tégen de afschaffing van kinderarbeid.
---

Vóór de afschaffing van kinderarbeid:

1.

2.

Tégen de afschaffing van kinderarbeid:

1.

2.

**Leg je antwoordvel als jullie klaar zijn of als de tijd om is op de hoek van je tafel.**

## Appendix D: Coding categories for actual oral teacher feedback in Dutch

Code			Operationalisatie	Voorbeelden
Main	Sub	Ssub		
Veri	G		Een algemene, beknopte, simpele beoordeling waarbij in wordt gegaan op de juistheid van bijvoorbeeld een resultaat, maar uit de context niet is af te leiden of het gaat om de taakhoud of het proces.	Perfect.
Veri	C		Een algemene, beknopte, simpele beoordeling over de juistheid van de taakhoud (i.e., de stof, het onderwerp). Kan een beoordeling zijn van een antwoord van een leerling/groep, maar kan ook een correctief antwoord zijn op een vraag van een leerling met betrekking tot de taakhoud.	Ja. Ja. Heel goed.
Veri	P		Een algemene, beknopte, simpele beoordeling over de juistheid van het leerproces (i.e., het samenwerkend leren, het vertoonde gedrag). Kan een beoordeling zijn van een antwoord van een leerling/groep, maar kan ook een correctief antwoord zijn op een vraag van een leerling met betrekking tot het proces.	Ik vind het wel goed. Die vragen ook al. Ja, per bron.
Elab	G		Een concrete, specifieke opmerking die altijd een verificatie bevat, maar daarnaast altijd informatie bevat over waarom iets juist of onjuist is, maar waarbij uit de context niet is af te leiden of het gaat om de taakhoud of het proces.	-
Elab	C		Een concrete, specifieke opmerking die altijd een verificatie bevat, maar daarnaast altijd informatie bevat over waarom het resultaat, het antwoord correct of incorrect is. Kan ingaan op goede en/of slechte punten van het gegeven antwoord.	Ja, want dan raak je werknemers kwijt.
Elab	P		Een concrete, specifieke opmerking die altijd een verificatie bevat, maar daarnaast altijd informatie bevat over waarom het leerproces of het gedrag correct of incorrect is. Kan ook ingaan op goede en/of slechte punten van het proces.	Kijk eens, dat is bijna alles al ingevuld. Wat goed. Jawel, want je overlegt welk antwoord je gaat formuleren met elkaar.
Expl	G		Een concrete, specifieke opmerking die extra informatie geeft in de vorm van een uitleg of een instructie, en waarbij uit de context niet is af te leiden of het gaat om de taakhoud of het leerproces.	-
Expl	C	+V	Een concrete, specifieke opmerking die naast een verificatie extra informatie geeft over de taakhoud in de vorm van een uitleg of een instructie. De uitleg kan het juiste antwoord of een expliciet voorbeeld bevatten.	Nee, uit die tekst blijkt dat ze niks betaald kregen. Bij die baas niet. Bij andere bazen krijgen ze wel eens wat betaald.
Expl	C	-V	Een concrete, specifieke opmerking die extra informatie geeft over de taakhoud in de vorm van een uitleg of een instructie. De uitleg kan het juiste antwoord of een expliciet voorbeeld bevatten.	De reden waarom kinderarbeid gebruikt wordt. Ja? Dus niet in elke bron kun je de informatie vinden die je zoekt. Is niet altijd aanwezig.
Expl	P	+V	Een concrete, specifieke opmerking die naast een verificatie extra informatie geeft over het leerproces in de vorm van een uitleg of een instructie. Reguleert en stuurt het proces door expliciet aan te geven of uit te leggen wat de leerlingen moeten doen en wat er moet worden verbeterd aan het proces.	Ja, maar dan samen overleggen. Als het in de bron staat. Staat er niets over in dan zet je 'niet van toepassing'. Ja dat kan.

Expl	P	-V	Een concrete, specifieke opmerking die extra informatie geeft over het leerproces in de vorm van een uitleg of een instructie. Reguleert en stuurt het proces door expliciet aan te geven of uit te leggen wat de leerlingen moeten doen en wat er moet worden verbeterd aan het proces.	Je krijgt ieder zo'n vel. Met het vel ga je die vragen beantwoorden, ga je die bronnen doorlopen.
Supp	G		Een concrete, faciliterende opmerking die de leerling extra informatie geeft in de vorm van strategische hints, uitgewerkte voorbeelden en het stellen van vragen, en waarbij uit de context niet is af te leiden of het hierbij gaat om de taakhoud of het leerproces.	-
Supp	C	+V	Een concrete, faciliterende opmerking die naast een verificatie, de leerling extra informatie geeft over de taakhoud in de vorm van strategische hints, uitgewerkte voorbeelden en het stellen van vragen. Het expliciet geven van het juiste antwoord wordt ontweken, dit wordt aan de leerlingen zelf overgelaten.	Ja, maar denk je dat de fotograaf...Zou de fotograaf denk je een tegenstander of een voorstander van kinderarbeid zijn?
Supp	C	-V	Een concrete, faciliterende opmerking die de leerling extra informatie geeft over de taakhoud in de vorm van strategische hints, uitgewerkte voorbeelden en het stellen van vragen. Het expliciet geven van het juiste antwoord wordt ontweken, dit wordt aan de leerlingen zelf overgelaten.	Zien ze er vrolijk uit? Wat zou een reden tegen afschaffing van kinderarbeid zijn? Als je werknemer bent?
Supp	P	+V	Een concrete, faciliterende opmerking die naast een verificatie, de leerling extra informatie geeft over het leerproces in de vorm van strategische hints, uitgewerkte voorbeelden en het stellen van vragen. Kan de leerling aanzetten aan de slag te gaan, maar geeft niet expliciet aan wat zij moeten doen, dit wordt aan de leerlingen zelf overgelaten.	Nou ga aan de slag, want zo'n houding dat is niks. Ja, nou jij kan het ook doen. Het gaat goed hierzo zie ik. Geen vragen?
Supp	P	V	Een concrete, faciliterende opmerking die de leerling extra informatie geeft over het leerproces in de vorm van strategische hints, uitgewerkte voorbeelden en het stellen van vragen. Kan de leerling aanzetten aan de slag te gaan, maar geeft niet expliciet aan wat zij moeten doen, dit wordt aan de leerlingen zelf overgelaten.	Weten jullie wat de bedoeling is? Ga nu aan de slag. Het kan zijn dat in de bron bijvoorbeeld niet een reden van een fabrikant staat, maar wel een reden van ouders of zoiets, dat kan zijn, maar dat moet je even per bron bekijken.
ST			Opmerkingen die geen betrekking hebben op de taakhoud of het leerproces. Hieronder vallen opmerkingen die niet worden geclassificeerd als feedback, maar ook opmerkingen die wel feedback geven als deze niet van toepassing is op de taakhoud of het leerproces. Ook opmerkingen die indirect voortkomen uit de opdracht, maar niet daadwerkelijk ingaan op de taakhoud of het leerproces worden hieronder geschaard, zoals ook opmerkingen over de leeromgeving.	Handig, heh? Wat zeg je? Dat is nou het mooie van zo'n samenwerkingsopdracht. Dat is een microfoon. Ik heb net de deur open gedaan. Nee, dit hoeft je niet te leren voor het proefwerk. Een A3-formaat, heb je die nodig dan?

*Noot.* Main = hoofdcode; Sub = code onderverdeling; Ssub = code onderverdeling 2; Veri = juistheid opdracht of antwoord; Elab = elaboratie waarom juist/onjuist; Expl = uitleg; Supp = hints of aanwijzingen; ST = social talk niet gericht op de opdracht; G = algemene feedback; C = feedback gericht op de taakhoud; P = feedback gericht op het leerproces; +V = de feedback bevat een verificatie; -V = de feedback bevat geen verificatie.

Appendix E: Observational scheme for actual oral teacher feedback

Actual oral teacher feedback			Veri			Elab			Expl					Supp					ST
Cl	Gr	No. I	G	C	P	G	C	P	G	C	C	P	P	G	C	C	P	P	ST
										-V	+V	-V	+V		-V	+V	-V	+V	
2v1	1																		
	2																		
	3																		
	4																		
	5																		
	6																		
2v2	7																		
	8																		
	9																		
	10																		
	11																		
	12																		
2v3	13																		
	14																		
	15																		
	16																		
	17																		
	18																		
	19																		
	20																		

Note. Cl = Class, Gr = Group, No. I = number of interventions, Veri = verificative feedback; Elab = elaborative feedback; Expl = explanative feedback; Supp = supportive feedback; ST = social talk; G = general feedback which is not explicitly directed at either the task or the process; C = feedback directed at the task content; P = feedback directed at the task process; +V = feedback containing a verification; -V = feedback not containing a verification.

## Appendix F: Transcript convention in Dutch

- (...) Docent of leerling is niet of niet goed te verstaan
- O Onderzoekster
- D De docent die spreekt
- L Een willekeurige leerling die spreekt, onbekend welke leerling aan het woord is
- L1 Een leerling die aan het woord komt in de interactie. Willekeurige nummering binnen elke groep leerlingen en elke groep wordt opnieuw genummerd
- ... Er valt een stilte of er passeert een korte periode zonder dat interactie plaatsvindt
- (*schuin*) De situatie wordt door de onderzoeker beschreven
- (naam L1) Een leerling wordt bij naam genoemd. Op deze wijze worden de namen anoniem verwerkt

## Appendix G: Transcript for Class 1 in Dutch

- D: (*Klassikaal.*) (...) Moet je op een gegeven moment een vragenlijst invullen. Ik kan niet garanderen dat je dan ook helemaal klaar bent met de opdracht. Op een gegeven moment dan kappen we het af. En dan zeggen we van nou moeten jullie voor de tweede keer een vragenlijst invullen aan de hand van de opdracht die jullie hebben gemaakt. Ja? Het kan zijn dat je nog niet klaar bent, maar ik denk wel dat dit gaat lukken. (Naam L), laatste vraag.
- L: Is het voor een cijfer?
- D: Nee het is niet voor een cijfer.
- L: Ohhhh. (*Meerdere leerlingen reageren op deze manier. Rumor vanuit de klas.*)
- D: (*Klassikaal.*) Het is een soort andere werkvorm, samenwerken. Ja? (*De docent deelt de bronnenset uit en krijgt een microfoontje bevestigd aan kleding.*)
- D: (*Klassikaal.*) Ik stel voor dat je aan de slag gaat. Uh, en wat ik heb gezegd, eerst even de tekst lezen. Voor jezelf lezen, daarna ga je pas zachtjes overleggen. (Naam L), kom op eerst even lezen. (*Een leerling uit groep Curie stelt een vraag.*)
- L1: Moet je het hele boekje doorlezen?
- D: Eerst even de bronnen en het boekje lezen, ja. (*Klassikaal.*) Sssshhhhh. Eerst even iedereen afzonderlijk lezen en vervolgens langzaam aan de slag. (*Terwijl de leerlingen lezen deelt de onderzoekster de antwoordvellen uit.*)
- D: (*Klassikaal.*) Op het moment dat je het straks gelezen hebt jongens, ga dan zachtjes... mag je zachtjes overleggen over de opdracht ja? Maar fluisteren, dat ik niet, uh (Naam L) jou hier moet horen snap je?
- L: Ik ben niet (Naam L) meneer.
- D: Ja, (Naam L) in dit geval. Je snapt wat ik bedoel.
- L: (Naam L) zit daar.
- D: Ja, duidelijk. (*Docent loopt rond en wijst een leerling draait een leerling in groepje Curie om die omgedraaid op de stoel zit.*)
- D: (*Zachtjes aan leerlingen voor zijn bureau.*) Wie is afwezig uh...
- L: (...)
- D: Ok.
- (*Start van het samenwerkend leren.*)  
(*Docent loopt naar groep Archimedes waar vingers worden opgestoken.*)
- D: Ja?
- L1: Uhm, mag er nog een raam open?
- D: Ik heb net de deur open gedaan, dan tocht het een beetje door. Ja? Hoop ik, ik vind het ook warm. Ja?
- L2: Wat moet je doen?
- D: Heb je de opdracht gelezen?
- L2: Ja ik heb dit doorgelezen, maar... daar staat alleen dat je het moet lezen en op die drie punten moet letten.
- D: Ok, op het moment dat je het gelezen hebt ga je beginnen bij vraag één “Welke redenen hebben fabrikanten om kinderen in hun fabrieken te laten werken” en dat ga je halen uit de verschillende bronnen die je gaat lezen.
- L2: Moet je dat per bron doen of gewoon...
- D: Ja, per bron.
- L2: Ok.



- D: Ok. Per bron ga je dat dus...
- L2: Per bron een ander antwoord.
- D: Nou ja, dingen die je tegenkomt zeg maar. Je moet even kijken wat je tegenkomt. Niet, niet elke bron geeft informatie over datgene, wat jij wilt weten.
- L2: Eén, twee, drie neerzetten en bij elke ding opschrijven wat je daarover tegenkomt in die bron.
- D: Ja, maar dan samen overleggen.
- L2: Ok. (*Docent loopt naar groep Curie.*)
- D: Weten jullie wat de bedoeling is?
- L2: Ja. Alleen wij weten niet waarom we Curie heten.
- L3: Curie.
- D: Dat maakt toch niet uit?
- D: Aan de slag. (*De docent loopt door de klas en een leerling uit groep Galilei stelt een vraag.*)
- L1: Moet je dit later ook leren meneer?
- D: Wat?
- L1: Moet je dit later ook leren voor toetsen?
- D: Nee (*lacht*). Nee (Naam L1), dat hoeft je niet te leren. Nee, nee dat ga ik niet letterlijk terugvragen ofzo.
- L2: (*Lacht.*) Het is meer dan hoofdstuk zeven.
- D: Maar, ga nou maar aan de slag. Weet je wat de bedoeling is?
- L1: Ja.
- L2: Ja. Gewoon die vragen beantwoorden.
- L1: Dit beantwoorden.
- D: Ok. Ja. (*Docent loopt verder en reageert wanneer er vanuit groep Archimedes een vraag blijkt te zijn.*)
- L1: Meneer? Meneer?
- D: Ja?
- L1: Moeten we het op een apart blaadje invullen?
- D: Ja.
- L1: Maar dat is toch helemaal geen samenwerken?
- D: Jawel, want je overlegt welk antwoord je gaat formuleren met elkaar.
- L2: Maar dan heb je toch allemaal hetzelfde antwoord?
- D: Dat is nou het mooie van die samenwerkingsopdracht.
- L2: Maar moet je het dan alle vier...
- D: Opschrijven ja... het is, maar dan heeft iedereen dat staan. Anders eh schrijf jij het op en dan heeft (Naam L1) geen blaadje.
- L2: Maar als we het nou opschrijven en dan later kopiëren?
- D: Schrijf het maar gewoon op. (*Docent loopt verder, en spreekt groep Pythagoras aan.*)
- D: Lukt 'ie hiero?
- L: Ja hoor.
- D: Weet je wat de bedoeling is ook?
- L: Nou deze vragen invullen.
- D: Ja.
- L1: Maar uh, ik zit te kijken wat dit is, moet je hier op schrijven?
- D: Ja, daar kun je op schrijven. Ja, dus je gaat aan de hand van die bronnen...ga je de vragen beantwoorden. En niet elke bron geeft informatie over hetgene wat

jij wilt weten. Je hebt nu voor elk...ieder van jullie heeft een blaadje, dus overleg samen de antwoorden die jullie willen formuleren.

*(De docent gaat achter zijn bureau staan voor in de klas en vlak achter zijn bureau zit groep Newton waarvan een leerling een opmerking maakt over het microfoontje aan de kleding van de docent.)*

L1: Meneer is dat niet irritant?

D: Ja ik denk er niet aan. Denk er niet aan...uh

L2: Het lijkt net iets van Star Wars weet je wel.

D: Ja dat uh, dat idee heb ik ook een beetje ja. Ja. Ja. *(Groep Newton lacht.)*

L3: Als je antwoord moet je dan ook in dat microfoontje praten? Als ik tegen u antwoord moet ik dan ook in dat microfoontje praten of?

D: Nee, maar dat microfoontje vangt in feite op wat ik nu zeg. Hoef ik niet helemaal in te spreken nee.

D: Uh...jullie weten wat de bedoeling is heh?

L3: Ja.

D: Je krijgt ieder zo'n vel. Met het vel ga je die vragen beantwoorden, ga je die bronnen doorlopen.

L2: Moet het deze les af?

D: Nou je moet zo ver mogelijk komen. Dus ik stel voor dat jullie nu met z'n vieren zo, dat jullie zo gezellig zitten, dat je denkt...we gaan nu aan de slag.

L4: We hebben geen vel.

D: *(Naam L2) hier die is team-captain die moet uh...die heeft hier een vel. (Docent loopt verder en wordt door een leerling van groep Curie aangesproken.)*

L2: Meneer?

D: Ja?

L2: Mag je hier op schrijven? *(Duidt op de bronnenset.)*

D: Je mag hierop schrijven, maar ik zou hier op schrijven *(duidt op het antwoordvel)*, hier moet je de antwoorden....

L2: Ja, maar gewoon even markeren.

D: Ja dat is goed. Vind ik niet erg. Vind ik niet erg. *(Docent loopt verder en luistert mee bij groep Galilei.)*

D: Kom je eruit *(Naam L3)*?

L3: Ja hoor.

D: Ok. *(Docent loopt naar groep Lorentz en kijkt mee.)*

D: Je kijkt een beetje zo glazig uit je ogen uh... Ja zo van...ik zit nog helemaal te denken, wat gaan we ervan maken.

L1: Meneer, wat zit er hier aan uw bloes?

D: Dat is een soort microfoon. Die vangt zeg maar alles op wat ik zeg. Dat is voor het onderzoek belangrijk.

D: Maar uh...terug naar de opdracht. Jullie weten wat de bedoeling is heh?

L: Ja.

L: Nee.

D: Uiteindelijk maak je aan hand van die vellen die je hebt...moet je...je gaat die bronnen bekijken en dan ga je aan de slag met die vragen die daar staan.

L1: Oh wacht het zijn twee dezelfde.

D: Ja?

L1: Sorry.

D: Nou kom op uh...neem jij even het voortouw hierin om even de jongen....

- L1: Ja wacht ik ben nog niet klaar met lezen. (*Docent loopt verder door de klas en luistert bij de groepen.*)
- D: (*Klassikaal.*) Uh, jongens....ik vind uh dat het niveau uh....steeds....dat het niveau van het geluid steeds meer omhoog gaat. Dat vind ik niet prettig. Laten we afspreken dat je toch meer fluistert met je groepje. Ja? Meer fluisteren.
- D: SSSSSShhhhhh!! (Naam L3 groep Galilei), iets meer fluisteren. Iets meer fluisteren. (*Docent loopt naar groep Newton en luistert mee.*)
- D: Nee uh, ga verder. (*Docent luistert naar discussie binnen de groep.*)
- L1: (...) voor vaders. Hele families werden uit elkaar gehaald door oorlogen enzo.
- L3: Dat is toch niet redenen voor fabrikanten?
- L1: Nee, want de moeders moesten hun kinderen en zichzelf allemaal naar de fabriek, want kinderen...
- L3: Oh, dus dit zijn de ouders...
- L1: Ja.
- L3: (...) redenen fabrikanten.
- L4: In bron vijf staat...
- D: Uh, begin nou met dingen die je zeker weten weet, waarover je nog weinig discussie hebt, want anders zit je over één punt heel lang te discussiëren...en dan heb je vervolgens nog niks opgeschreven.
- L2: Ok.
- L3: Ok. (*Docent loopt weer verder en luistert bij verschillende groepen. Docent reageert op een gesprek binnen groep Curie dat niet gaat over de opdracht.*)
- D: Hou je nou gewoon rekening met de bronnen.
- L2: Nee, maar we hebben al twee af.
- D: Stel jullie moesten een auto bouwen in de tijd van de Industriële Revolutie en jullie werkten met z'n vieren in een fabriek.
- L2: (*Licht.*)
- L1: Ja maar daarvoor had je de machines.
- D: Ja...
- L2: Oh nee, die hadden ze toen nog niet.
- D: Ja, maar stel...ssshh....stel jullie moesten die auto in elkaar zetten ja? Jullie zouden per dag misschien één auto bouwen in dit tempo.
- L1: Je deed toch gewoon één handeling? Het was saai en eentonig werk.
- L2: Ja, en ondertussen kan je praten.
- L4: We zijn toch ook met z'n vieren.
- D: Ja, dat is te langzaam dus, want je moet doen aan massa-productie.
- D: (Naam L1)? (*Wijst de leerling op de opdracht.*)
- L1: Ja ik kan (...)
- D: Het tempo kan, het kan hoger. (*Docent loopt verder en krijgt een vraag van een leerling uit groep Lorentz.*)
- L2: Meneer? Mag ik even naar de wc snel?
- D: Ja, dat is goed.
- L: Anders kunnen we hier straks gaan dweilen.
- L3: Meneer, mag ik hierop schrijven?
- D: Ja.
- L: Oh, cool.
- D: Ik zou de antwoorden op het antwoordvel schrijven, maar je mag daarop wel dingen markeren, ja dat is geen probleem. (*Docent kijkt bij de groepen en blijft staan bij groep Newton.*)
- L3: Het zijn meningen. Zo kan ik niet werken.

- D: Weet je wat handig is dan? Om daar even vanaf te komen. Als jullie nou gewoon bron drie beet pakken en jullie bron twee, dan heb je in ieder geval dat je even terugkomt naar de focus, want nu uhh...ben je over één bron ben je ontzettend lang aan het babbelen en aan het lachen...
- L1: Maar we kunnen het niet gewoon verdelen? Zeg..ik doe bron één...en...
- D: Ja maar uh...tot zo ver heb jij dat....maar het moet wel een soort samenwerkingsopdracht...en niet zo zijn van...jij doet bron één, ik doe bron twee en bron drie en dan...
- L1: Ja maar...
- D: In feite dan hadden jullie net zo goed ergens anders kunnen zitten dan...
- L1: Ja maar, dan...
- D: ...maakt helemaal niet uit.
- L1: (...)
- D: Nee maar, probeer nou eens met (Naam L2) dan in ieder geval al één bron te analyseren en jullie twee een andere bron, want dan heb je even die focus terug. Want nu is het alleen maar uh....
- L1: Kunnen we dan niet beter wij twee (*wijst op haar buurman*) en hun twee (*wijst op overige twee groepsleden*)? Hun zitten dicht bij elkaar, straks dan zitten die jongens zo tegen elkaar....
- D: Ja dat is goed. Uitstekend plan. Nou (Naam L2) kom op, aan de slag.
- L2: Ja, ik ben bezig.
- L3: (...) serieus.
- D: Ja, dat moet je nou weer niet zeggen: "Ok, heel serieus, heel serieus." Dat klinkt als een soort grap. Zo van uh.... (*De docent blijft heel even staan en loopt dan naar groep Pythagoras.*)
- D: Het gaat goed hiero zie ik. Geen vragen?
- L2: Nee...Nou... Hier staat voor of tegen. Moet je dan één van de twee doen of maakt het uit als je ze allebei doet?
- D: Van allebei iets kunnen noemen.
- L2: Maar hier staat niets in.
- L1: Nee.
- D: Als het in de bron...als het in de bron staat. Staat er niets over in dan zet je 'niet van toepassing'. Ja, dat kan. Niet elke bron geeft informatie over al die punten. (*Docent loopt langs groep Curie en zegt iets tegen L1.*)
- D: Shhhhhhhht. Iets zachter, iets zachter. (*De docent ziet een vinger in de lucht en loopt naar het groep Lorentz toe.*)
- D: Ja, (Naam L3).
- L3: Ik snap het eigenlijk nu niet meer, want er staat hier wat op....en dit.... en wat moet je nou maken?
- D: Die.
- L2: Ha, ik zei het toch.
- L3: Alleen deze? En dit niet?
- D: Nou....
- L4: Er staat toch dat je het eventueel moet gebruiken?
- L3: Ja.
- D: Ja, je moet het eventueel maken, maar ga dit eerst maken. Als je hier helemaal mee klaar bent, wat ik betwijfel uiteindelijk dan kunnen we altijd nog kijken of we die drie vragen moeten maken. Maar ga eerst aan de slag met die drie vragen. In feite zijn die vragen bijna hetzelfde (Naam L3) als je ze leest.
- L3: Ja.

- L2: Ze zijn ook hetzelfde.  
D: Alleen deze zijn wat meer...uh...  
L2: Tekstgericht.  
D: Tekstgericht, ja.  
D: Nou ja das een mooie, mooie uitspraak...tekstgericht. (*De docent loopt verder en spreekt onderzoekster aan.*)  
D: Ik houd de tijd ook wel in de gaten, maar mocht ik het vergeten, zeg het dan even wanneer je die....  
O: De les duurt tot tien voor twaalf....uh tien over twaalf.  
D: Dus tien minuten hebben ze dus.....dus eigenlijk nog iets voor twaalfen die enquête invullen, want....dan kunnen ze even zitten in de juiste....dan kunnen ze die enquête voor zichzelf invullen misschien toch? Dat ze ook weer goed gaan zitten.  
O: Dat was niet de bedoeling, maar ik weet niet of....als jij ze goed wilt laten zitten dan is dat goed.  
D: Nee, nee, dat doen we wel.  
O: Moet je even eerder de tijd nemen.  
D: Ja. Ik doe niet zo vaak samenwerkingsopdrachten, dat zorgt voor een soort onrust in mijn hoofd.  
O: Ik vraag me ook een beetje af of als je dan zegt dat uh....kijk als dat je zegt daar krijg je geen cijfer voor als dat je zegt het wordt nog besproken dat ze dan beter hun best doen.  
D: Nou ik kan het bij die andere klas eens proberen. Maar ja.... Ik vind altijd...alles wat je zegt moet je waarmaken en uh, als ik dat niet ga doen.... (*Docent loopt weer verder langs de groepen. En stopt bij groep Pythagoras.*)  
L2: Anders schrijf je het niet mooi.  
D: Erg netjes, erg netjes wordt er geschreven ook zie ik.  
L2: Jaaaa. (*Leerlingen in de groep lachen.*)  
D: Nou (Naam L2), het is toch goed leesbaar? (*Bekijkt het antwoordvel van de leerling.*)  
L3: Maar zijn handschrift is (...)  
D: Tis prima te lezen. Tis prima te lezen. Maar, dit is heel netjes, dit is heel netjes.  
L: Ok. (*De docent schuift een groep door naar groep Newton.*)  
L: .....de fiets.  
D: De fiets? Er zit geen fiets in de tekst. Kom op.  
L1: Meneer, moet je nou weten wat de ene fabrikant is en alleen de ouders van..van deze bron?  
L4: Waarom bent u ons aan het opnemen?  
D: Je kunt niet in elke bron, uh de informatie vinden die je wil, ja? Dus dan moet je zeggen niet van toepassing. Ja? In die bron is dat niet te vinden.  
L4: Meneer heeft u een pacemaker of bent u ons aan het opnemen.  
D: Nee, ik ben mezelf aan het opnemen (Naam L4). Dus, mezelf. (*Docent zegt iets door de klas tegen een leerling van groep Lorentz.*)  
D: Uh, (Naam L)! (Naam L)! (Naam L)! Blijf even zitten. (*Docent loopt naar groep Archimedes toe, aangezien daar een vraag is.*)  
L1: (...)  
D: Wat zeg je?  
L1: Heeft u een A3-formaat?  
D: Een A3-formaat? Heb je die nodig dan?

- L1: Ja.
- D: Waarom?
- L1: Omdat ik dyslexie heb.
- D: Oh, hiervan bedoel je? Nee, daar heb ik niet aan gedacht. Uh, sorry. Nee die heb ik dan niet, die opvatting bedoel je, ok. Dat heb ik niet voor je. (*Docent loopt door de klas.*)
- D: (*Klassikaal.*) Sssssshhht. Iets zachter jongens. Sssssshhht. (*Docent kijkt rond en blijft staan bij groep Archimedes.*)
- D: Ziet er goed uit.
- D: Het schiet ook op zie ik.
- L2: Archimedes was toch een Griek?
- D: Ja.
- L2: Een Griekse uitvinder?
- D: Ja het zijn allemaal uh, het zijn allemaal Griekse filosofen en wetenschappers die ik uh voorbij uh...
- L2: (...)
- D: Nou Curie dan weer niet. Dat is van Adam Curie, dat is niet diegene die met Patricia Paaij getrouwd was, maar dat is uh...gaat over een uitvinder.
- L2: (...)
- D: Nee. (*Docent loopt verder en blijft staan bij groep Lorentz.*)
- L1: Waarom komt u de hele tijd bij ons?
- D: Omdat ik je wil opnemen (Naam L1).
- L1: Nee.
- D: Dus je mag wat zeggen in de microfoon.
- D: Nee ik, ik loop bij iedereen een rondje en ik zie dat jullie nog bij bron één zijn.
- L3: Ja.
- D: Nou, bron twee. (...)
- L1: Ja, maar hij werkt voor zichzelf.
- D: Ja, dat is niet de bedoeling. Je moet samen overleggen, maar dan wel snel, kort en bondig tot een antwoord kunnen komen.
- L3: Ik zit al een half uur om langs (Naam L4) te komen dus...
- L4: Ja, die (Naam L3) die weet gewoon niet hoe je...
- D: Je...niet.... Ga aan de slag.
- L: Ja.
- D: Je zit in het groepje, dus dan moet je met elkaar samen werken.
- L4: Dat doen we ook.
- D: Ja maar bovendien is dat ook raar dat je iemand aanspreekt met die (Naam L3).
- L4: Ja, die (Naam L3) ja.
- D: Die (Naam L3). Dat klinkt zo afstandelijk.
- L3: Ja.
- D: Toch?
- L4: Ja. (...)
- D: Die (Naam L4) die uh, ja dat is uh...(*Docent loopt verder en stopt bij groep Newton.*)
- L: (*Tegen een groepsgeenoot*) Maar die van fabrikanten en ouders kun je niet vinden?
- D: Dus niet in elke bron kun je de informatie vinden die je zoekt. Is niet altijd aanwezig. (*Docent houdt overzicht en staat voor de klas.*)

- D: *(Als reactie op leerling in groep Newton, vlak voor hem, die naar de camera zwaait)* (Naam L4)...hoeft niet, hoeft niet. *(Docent loopt naar groep Lorentz toe, aangezien er een vraag is.)*
- D: (Naam L3).
- L2: Weer een vraag van (Naam L3).
- D: Nou...
- L3: Hier staat...de kinderen kregen geen loon...
- D: Ja?
- L3: Maar waarom zou je dan die kinderen laten werken?
- D: Ja dat was aan het begin zo. Dat uh, als ouders geen opvang konden regelen, dat die kinderen dan gewoon meedingen in die fabrieken...
- L3: Dus...
- D: ...en op een gegeven moment kregen ze wel betaald, maar aan het begin nog niet.
- L3: Maar dan moesten ze wel werken...als ze pech hebben.
- D: Nou, in ieder geval die ouder helpen. Vaak gebeurde dat. Wat ook een voordeel opleverde voor uh, voor de werkweek.
- L1: Moeten we dit straks ook doen voor het proefwerk?
- D: Nee je hoeft dit niet van mij te leren, maar uh...we hebben het over kinderarbeid gehad en sommige zaken waar wij het over gehad hebben, die komen gewoon terug.
- L1: Ok.
- D: Dus die herken je ook als het goed is. *(De docent loopt langs groepen en maakt bij groep Archimedes een opmerking.)*
- D: Perfect. *(De docent loopt verder. En houdt voor in de klas overzicht.)*
- D: *(Klassikaal.)* Uh jongens let even op. Ik heb gezien dat sommige mensen...even stoppen met praten...
- D: Dat sommige mensen ontzettend goed bezig zijn geweest. Ook vaak heel stil uh samen hebben gewerkt met een groepje. Andere mensen die, die kwekken toch veel van hun tijd weg, dat is zonde....Of, die zijn heel luidruchtig, dus probeer er op te letten...
- D: Straks en dat is niet over heel lang...over pak 'm beet vijf minuten. Dan wil ik dat je het volgende gaat doen, op een gegeven moment geef ik een teken, ja? Dat zal ik ook aangeven weer. Ga je weer zitten op je eigen plek, schuiven we die tafels en stoelen weer terug zoals ze horen te staan. Vervolgens, krijg je een vragenlijst, die ga je voor jezelf invullen. Dus niet met iemand overleggen, nee, die vul je zelf in en, ja daarmee is de opdracht klaar. Wat ik nog wilde aangeven, sommige mensen vroegen, ja moeten we dat nou leren voor het proefwerk. Kijk, ik kan wel zeggen, ja dat je dit moet gaan leren, maar een aantal van deze dingen, die staan ook in het boek. Ja, want wij hebben het gehad over kinderarbeid, wij hebben het gehad over die slechte arbeidsomstandigheden.
- D: (Naam L3 groep Galilei), je praat door me heen.
- D: Ja, dus een aantal dingen hebben raakvlakken met de stof. Maar in feite is het een soort uitbreiding van de stof, dus ik ga niet zeggen van leg uit waarover bron vijf ging, twee weken geleden en etcetera. Dat ga ik dus niet vragen. Het gaat er meer om dat je, dat die kennis waar wij het over hebben gehad, dat die meer integreert in je hoofd dat je denkt van hey kinderarbeid heb ik nu een groter beeld van dan dat ik daadwerkelijk eerst had. Laten we zeggen, nog

- drie, vier minuten aan de slag. Dan geef ik een teken, dan ga je terug naar je plek en krijg je van mij die vragenlijst.
- D: Ga aan de slag, maar zachtjes fluisteren. Niet meer dat gepraat.
- D: Ik krijg het druk in mijn hoofd zeg van dit soort opdrachten. (*Docent loopt naar groep Pythagoras waar een vraag is.*)
- L2: Meneer, gaat u ook zoiets vragen als waarom kan je in plaats van één nu voortaan twee tot vier weefgetouwen tegelijk bedienen?
- D: Wat?
- L2: Gaat u ook zoiets vragen als waarom kan je in plaats van één nu voortaan twee tot vier weefgetouwen tegelijk bedienen?
- D: Nee. Staat hier wel in ja, maar dat ga ik niet vragen. En dat je dan weet jij me waarschijnlijk een heel makkelijk antwoord te geven, dat gaat sneller, is efficiënter, ik vind het een soort inkopper vraag snap je? Tis niet dat ik denk van nou, dit is echt zo'n vraag dat heb...daar kan ik (verkeerde Naam L2) mee pakken daar moet 'ie echt over nadenken. Dit is meer van...oja dit is het antwoord.
- L2: Ik ben (juiste Naam L2).
- D: Ja, (juiste Naam L2).
- L2: Gaat u dan wel over redenen van fabrikanten vragen?
- D: Ik heb gewoon vijf (Naam L2) die ik les geef. Weet je hoe...en dan één (eerder genoemde verkeerde naam voor L2).
- L2: Ja.
- D: En dan, en dan zit ik les te geven en dan denk ik is dit nou (Naam L2) of is dit nou (verkeerde naam L2)? Nou...
- L2: Weet u hoe je mijn naam schrijft?
- D: Ja...met twee t's. Maar dat weet ik alleen maar omdat dat degene, dat degene die het zegt dat is degene met twee t's.
- L2: Nee, met twee t's en een h.
- D: Ja, maar er zit altijd een h in (Naam L2).
- L2: Nee hoor.
- D: Nou, de (Naam L2) die ik allemaal lesgeef zitten overal een t en een h in, maar er is maar eentje met twee t's en dat ben jij. Dus degene die vraagt weet u hoe je mijn naam schrijft, dan weet ik meteen, dat is met twee t's. Want die andere (Naam L2) vragen dat niet. (*Docent loopt weer verder en reageert op een leerling die opstaat bij groep Galilei.*)
- D: Heb je een vraag (Naam L2)?
- L2: Mag ik naar de wc?
- D: Ja. Ik dacht daar komt een hele boeiende, interessante vraag over de stof maar...ja.
- L1: Maar moet...is dit voor ons?
- L3: Dit hoeft je toch alleen als ondersteu...uh geheugensteuntje. Dit hoeft je toch niet te doen, want we hebben de vragen gewoon uit ons hoofd gedaan.
- D: Ja maar je moet het wel opschrijven.
- D: En ik heb, ik zie, ik heb je daar wel zien schrijven...oh je hebt, je hebt het meteen het antwoordvel gebruikt. Ja zo.
- L3: Ja.
- D: Ja ok. Nou ja.
- L1: In ons hoofd een beetje gedaan.
- L4: (*lacht*) In ons hoofd.
- D: In jullie hoofd.



- D: Nee maar, dit is natuurlijk wel een hulpmiddel, maar door middel van dit hulpmiddel kun je uiteindelijk wel goed het antwoord formuleren. Dus, het is vaak handig om kort die bronnen door te lopen en dan kort dingen te noteren en dan pas gezamenlijk uiteindelijk een antwoord te maken.
- D: Maar jullie hebben die stap overgeslagen. Ja.
- L3: Mag?
- D: Nou ja, het was niet de bedoeling eigenlijk.
- L4: Maar meneer, kijk je schrijft hier als het ware twee keer, twee keer het antwoord op.
- D: Ik...nou ja... de volgende.... Bij dit vel moet je het veel uitgebreider vertellen dan je daar doet, maar sommige mensen doen het hier al heel uitgebreid, vervolgens wat ze hier zouden moeten doen hebben ze in feite hetzelfde neergezet.
- L3: Wij dachten, nou...eventueel...
- L1: We hebben een beetje hardop gepraat, een beetje gediscussieerd.
- D: Ok, ok.
- L1: En meneer, mogen we deze houden?
- L3: (...)
- D: Wat?
- L3: Er stond eventueel, dat is misleidend.
- D: Ja ja ja.
- L1: En, mogen we deze houden?
- D: Die worden weer opgehaald uiteindelijk maar uh...
- L3: Die worden ingelijst.
- D: Jouw opdracht wordt ingelijst?
- L3: Ja.
- D: Die hang ik dan boven m'n bed. (Naam L3) maakt opdracht op...uh...wat is het vandaag?
- L3: Twintigste<sup>e</sup>
- D: Twintig...
- L3: April.
- D: Twintig april 2011, en dan uh...vijftig jaar later als ik dan nog lesgeef dan zeg ik jongens...de eerste keer dat we de opdracht deden dat was nog met, met (Naam L3). (*Docent reageert op opmerking uit groep Lorentz achter hem.*)
- L4: Gaat u vijftig jaar nog lesgeven?
- D: Weet ik niet, misschien uh ben ik het na vijf jaar al zat denk ik. Misschien, misschien, ben jij van school weg denk ik...nu is het saai. Nu moet ik stoppen.
- L2: Nu ga ik weg.
- D: Nu moet ik stoppen ook. (Naam L4) is weg, de hele motivatie, de drive...is helemaal weg. (*Docent loopt naar het bord voor in de klas.*)
- D: (*Klassikaal.*) Uh, goed. Uh, dit is het teken in feite...het is handig nu om even weer terug te gaan naar je eigen plek. Zorg even dat je de tafels weer recht zet, de stoelen weer recht zet. (*Leerlingen staan op en gaan naar hun eigen plek in de klas terug.*)
- D: Oja. (*Docent tegen onderzoekster.*) Ze nemen hun eigen dingetje mee, op het moment dat je de vragenlijst ophaalt haal je die andere op. Dat weet ik zeker dat dat goed gaat. Ik had het kunnen benoemen maar om daar nu weer overheen te gaan schreeuwen heb ik niet zoveel zin in. Snap je? Ik weet zeker dat ze hun opdracht meenemen, jij komt langs met die vragenlijst. En dat zeg

ik ook nog eens een keer. Ja? (*De opdracht is nu afgelopen en als de leerlingen op hun plek zitten worden de vragenlijsten uitgedeeld.*)

## Appendix H: Transcript for Class 2 in Dutch

- L: Moeten de bronnen ook gelezen worden?
- D: Scan ze even goed door weet je wel, dat is eh...sssssssst. Sst, sst. (*De leerlingen lezen de opdracht eerst individueel van tevoren door. Na ongeveer drie minuten krijgen de leerlingen de opdracht uitgedeeld door de docent.*)
- D: (*Klassikaal.*) Ja jongens en meiden, ssssssssttt, luister even heel goed. Uhm...heren achterin even stil...dames. Goed. Het is nu dus de bedoeling dat jullie als groepje, samen, dit (*houdt het opdrachtvel omhoog*) gaan invullen en uh de vragen gaan maken. Jullie moeten daarbij samen overleggen, samen werken, samen daarover praten. Uh, ik loop ondertussen rond om eventuele vragen te beantwoorden als iets onduidelijk is of zoiets, kan je even je vinger opsteken dan kom ik langs. Uhm, je hebt daarvoor de bronnen nodig en het is echt de bedoeling dat je dat gezamenlijk met z'n viertjes in overleg goed aanpakt. We werken hier aan tot maximaal tien uur. Om tien uur krijgen jullie een vragenlijst. Uh, die moet je invullen, dan moet je ook deze opdracht inleveren. Nou we zullen als we het niet helemaal afkrijgen deze opdracht op een later tijdstip nog eventjes bespreken met elkaar. Ja, is dat duidelijk?
- L: Krijgen we hier een cijfer voor?
- D: Uh, nee. Eeuwige dankbaarheid en hopelijk een hele leerzame les. Ja?
- L: Hebben we dan weer een vragenlijst?
- D: Ja.
- D: Ok. Ja? (Naam L) (...)

(*Start van het samenwerkend leren.*)

(*Ongeveer anderhalve minuut geen geluid. De docent beantwoord ondertussen een vraag en kletst met groep Darwin. Geluidsapparatuur viel uit van 4 min. 50 t/m 6 min. 15. Onderzoekster verving batterij waarna er weer geluid is. De docent loopt naar groep Einstein en luistert hun onderlinge discussie aan.*)

- L: (...)
- L1: (*Tegen groepsgeenoot*) Maar hier staat het er niet achter. (*Tegen docent*) Moet uit elke bron iets komen?
- D: Uh.. het kan zijn dat in de bron bijvoorbeeld niet een reden van een fabrikant staat, maar wel een reden van ouders of zoiets, dat kan zijn, maar...dus dat moet je even per bron bekijken.
- L2: Dus zeg maar de reden dat ze in een fabriek werken ofzo?
- D: De reden waarom, heh, waarom kinderarbeid uh gebruikt wordt. Ja? (*Docent loopt verder naar groep Da Vinci.*)
- D: Komen jullie eruit? (*Docent krijgt geen reactie, en de groep leerlingen kletst door.*)
- D: Volgens mij gaat het uh (*lacht*) nu nog niet over de bronnen.
- L1: Wat heeft u voor bluetooth dingetje?
- D: Dat is mijn microfoontje, dus uh.
- D: Hey maar jongens, begin even bij bron één en dan verder. (*Docent loopt naar groep Bell, want er wordt een vinger omhoog gehouden.*)
- D: Dames, vertel.
- L1: Ik snap deze vraag niet (...).
- D: Ja, dus uh, worden er in de bron uh worden er redenen voor afschaffing van de kinderarbeid of worden er juist redenen voor behoud van de kinderarbeid genoemd? Weet je wel? En zo ja of...

- L2: Ja, voor behoud.  
L1: Het is meer behoud.  
D: Ja, nou ja en dan welke redenen. Ja?  
L2: Ok.  
D: Ok.  
L3: Ja. Maar, moet je er dan bij zetten welke redenen?  
D: Ja. Dus dan zeg je van: “Goh uh nou”, heh dus bijvoorbeeld “het is goedkoop, of ze zijn heh wat wendbaarder”, uh allemaal van dat soort redenen zou je kunnen zeggen. Heh? (*Leerlingen werken verder.*)  
L1: (*Tegen groepsleden*) Voor, want er gingen families uit elkaar.  
L3: (*Tegen L1*) Je moet tegen, omdat het tegen de afschaffing van de kinderarbeid is.  
D: Ja.  
L1: Oh. (*Docent loopt naar groep Watt.*)  
D: Er wordt hier gestaag doorgewerkt uh merk ik. Goed, goed zo. (*Docent loopt naar groep Edison.*)  
L1: Is dat een camera of een microfoon?  
D: Dat is een microfoontje. Dat is een microfoontje, ja.  
L1: Zie je?  
L2: Ik zei toch ook niets?  
L3: Waarom is een microfoon zo’n ongelooflijk grote...  
D: Dat, dat weet ik niet.  
D: Hey maar, komen jullie er een beetje uit?  
L3: Ja.  
D: Ja?  
L1: Ja.  
L3: Soort van...  
L4: Iets wat erop lijkt.  
D: Ok.  
L2: Ja, we zijn al bij vraag drie.  
D: Kijk eens aan, hartstikke goed. (*Docent loopt rond, luistert en kijkt bij de groepen.*)  
D: (*Tegen onderzoekster*) Ze gaan er leuk mee aan de slag.  
O: Fijn om te zien.  
D: Ja. (*Docent loopt rond en luistert bij de groepen en blijft staan bij groep Darwin.*)  
D: Heel goed (naam L1) dat je dat zo in de gaten houdt.  
L1: Ja heh? Ze hoort me niet eens hoor, maar....  
L2: Hey shit, we staan op de film.  
L3: Wij zitten op (...) te zoeken, dat is best belangrijk.  
D: Hey uh, want ik zie uh. Bron één is ingevuld?  
L2: Ja.  
L3: Snel heh?  
D: Ja, maar nu verder heh? Ja? (*Docent loopt verder, maar blijft de discussie in de groep volgen, welke niet gaat over het onderwerp.*)  
D: Goed. He, ik kom over twee minuten terug en dan wil ik wel dat je eh...zien dat jullie verder zijn gegaan en dat hier echt iets ingevuld is.  
L3: Maar ik weet al wat we in gaan vullen.  
D: Nou, ga dat doen. Ja? (*Kijkt bij andere groep en loopt langs een groep Bell.*)  
L4: Meneer?

- D: Ja.
- L4: Hier kun je toch niets uithalen, dit is een plaatje.
- L1: Maar er staat “er is geen enkel kind in de buurt zo gezond als de kinderen in de fabrieken”.
- D: Ja, maar denk je dat de fotograaf... Zou de fotograaf denk je een tegenstander of een voorstander van kinderarbeid zijn?
- L3: Tegen.
- D: Ja (*knikt*). Waarom denk je dat?
- L1: Nou ik denk voor.
- L2: Ja, ze zien er wel vrolijk uit op zich.
- D: Zien ze er vrolijk uit? (*Docent kijkt iedereen in de groep aan.*)
- L1: Ik denk voorstander.
- L3: Ja maar die (...) die zijn hartstikke bruin.
- L4: Ze zijn vies.
- D: Hmm?
- L4: Ze zijn vies.
- D: Ze zijn vies. Denk je dat dit een foto...dat deze fotograaf denkt van “He wat is het een goede zaak dat die kinderen hier kunnen werken”?
- L4: Nee.
- L1: Een voorstander dat de kinderarbeid wordt afgeschaft.
- D: Ja. Dus voorstander van afschaffing denk ik.
- L4: Maar moet je dan (...)
- D: Nou de redenen komen hier niet echt uit naar voren, maar je kan wel zeggen “He wacht eens even hier is duidelijk iemand aan het werk geweest, die heeft een beeld willen maken van hoe het er aan toe ging”...
- L1: En dan iets er van maken (...) redenen van de fotograaf.
- D: Ja. Zou je kunnen doen. Ja? (*Docent loopt naar een groep waar veel rumoer is, maar loopt vervolgens door naar groep Edison als zij een vraag hebben.*)
- L2: Meneer?
- D: Ja?
- L2: Kunt u even helpen?
- D: Natuurlijk...Vertel.
- L2: Er staat helemaal niks over de redenen (...)
- L1: In bron twee.
- L2: Uh, twee.
- L1: Tenminste niet voor de fabrikanten.
- D: Nee, nou ja.
- L2: Waarom ze kinderen wilde gebruiken.
- L: Er staat alleen zeg maar waarom de ouders de kinderen wilden...
- D: Nou ja, kijk wat je wel kan doen is heh van uh... Wat voor redenen...hierzo heh (*docent leest een gedeelte van de opdracht op*) “een alleen werkende kon nu twee mechanische touwen tegelijk bedienen. Met een kind was het mogelijk zelfs vier getouwen”...nou en een kind was veel goedkoper.
- L1: Maar dat staat alleen in bron één dat ze veel goedkoper waren. Dat staat niet in bron twee.
- D: Maar dat wordt hier toch ook gezegd hoeveel een bediende verdient en hoe uh...
- L1: Ja maar dat gaat over normale wever en een kind samen en die verdienen samen meer juist. Dan gaat het juist over (...).

- D: Ja. Maar ja, je moet wel even bedenken dat ze meer getouwen tegelijkertijd konden bedienen als ze er een kind bij hadden. En een kind was goedkoper, dus in plaats van dat je één heh... per weefgetouw twee volwassenen neerzet zet je nu een kind en een volwassene neer en dat kind is veel goedkoper. Ja?
- L1: Ok.
- D: Daar is over nagedacht hoor.
- L3: Dus het kind is goedkoop?
- D: Ja.
- L3: (...)
- D: Dat weet ik niet (naam L3) maar.... (*lacht*). (*Docent loopt verder. Als hij langs groep Watt loopt wordt een vraag gesteld.*)
- L1: Meneer wat is een shilling? Hoeveel is dat?
- D: Een shilling dat is...ja...even kijken hoor, volgens mij gaan er tien shilling in een pond, dus zo moet je het een beetje zien. Tis vergelijkbaar met de centen hierzo in eh...
- L1: Oh, dat is tien cent.
- D: Ja het is wel iets meer hoor.
- L2: Het is iets van vijfentwintig cent ofzo?
- D: Ja, maar het is niet...
- L2: En dan (...) dan heb je iets van dertig cent?
- D: Ja. (*Docent loopt door naar groep Edison en luistert mee.*)
- L2: Een plaatje. En dan moet je even de redenen (...)
- D: Ja. Weet je bij bij... Als je die bronnen bekijkt hebt, wat je hier eigenlijk moet denken van ... Een fotograaf is een fabriek ingegaan en heeft deze foto gemaakt. Waarom denk je dat deze fotograaf dat heeft gedaan?...
- L1: Om te laten zien dat...
- D: ...Denk je dat hij een voorstander is van kinderarbeid of juist een tegenstander en probeer dat uit het plaatje te halen. Dus je hoeft...kijk, hier worden niet echt redenen genoemd. Maar heh, je kan wel zeggen van heh joh of de maker van deze bron voorstander is of juist een tegenstander. Dat kan je waarschijnlijk wel uit de plaatjes krijgen. Ja?
- L3: Zijn de groepjes uitgepland?
- D: Wat zeg je?
- L3: Zijn de groepjes uitgepland? Dat geel een soort van beter werkt dan... blauw.
- D: Oh nee nee nee nee nee. Nee dat uh, dat uh .... (*Lacht*).
- D: Concentreer je maar even hier op en dat.
- L: (...)
- D: Oh nee, nee dat is niet daarop gebaseerd. (*Docent loopt naar groep Darwin.*)
- D: Nou, eens kijken wat er hier al gebeurd is.
- L1: Meneer, ik snap het niet.
- D: Ja.
- L2: (...) redenen fabrikanten (...)
- D: In bron drie bedoel je. Of uh?
- L1: Ook.
- L2: Bij alles.
- L1: Maar eigenlijk bij...vind ik vier nog vager.
- D: (*Docent bekijkt de bron.*) Nou ja ..... Je moet even kijken heh hier...uh (*leest op*) “geen enkel kind in de buurt is zo gezond als de kinderen in de fabrieken”...
- L1: (...) dat is toch niet waar?

- D: Nee (*lacht*). Dat zegt de fabrikant. Dus ...
- L3: Dat zei ik toch...
- D: ...heh, dat is misschien niet uh, niet heel erg betrouwbaar.
- L1: (...)
- D: Zo kan je het ook zeggen.
- L1: Dus die ouders denken ja ik doe mijn kind in de fabriek, want dat is gezond.
- D: Dat is zo gezond, gezond is goed voor mijn kind. Heh maar dan kan je in ieder geval zeggen dat hij de voorstander is en dat nou ja, hij vindt, eh, hij wil wetgeving tegenhouden die zich daarmee gaat bemoeien, dus er worden misschien niet hele duidelijke redenen genoemd, maar je weet in ieder geval wel dat die fabrikant, heh, die zijdefabrikant een heel duidelijke voorstander is van behoud van kinderarbeid. Nou ja, en dat moet je even kijken van eh...of daar misschien een financiële reden voor wordt gegeven of niet...
- L1: Maar dat is altijd zo.
- D: Ja?
- L2: Maar redenen voor of tegen, maar is dat vanuit de fabriek of vanuit de mensen?
- D: Uh...
- L1: Kan allebei.
- D: Nou ja, kan alle twee natuurlijk. Je kan als fabrikant zeggen van: "hey ik ben juist eh, ik wil dat kinderarbeid kan blijven bestaan, want kinderen zijn goedkoop, zijn wendbaarder, ik hoef ze minder te betalen", nou ja... heh...al die...al die redenen. "Ik kan ze op vroege leeftijd binden aan mijn fabriek"...eh, maar je kan zeg maar ook vanuit de ouders denken of... heh. Dus, kijk maar gewoon eventjes. Want het gaat eigenlijk om wat staat er in de bron over die uh zaak. Ja? (*Docent loopt naar groep Bell en bekijkt hun werk.*)
- D: Kijk eens, dat is bijna alles al ingevuld. Wat goed.
- L: (...)
- D: Ja. (*Docent loopt naar groep Watt en bekijkt hun werk.*)
- D: Kijk eens, dit gaat ook heel goed. Ja.
- L1: Maar het is ongeveer overal hetzelfde want het is overal dat goedkoop.
- D: Ja. Ja. Ja. (*Docent loopt rond en luistert bij de groepen. Uiteindelijk komt er een vraag van groep Watt.*)
- L1: Moeten we de volgende bladzijde ook doen?
- D: Ja. Dat zijn die vragen zeg maar. Je hebt nu eigenlijk, uit alle bronnen heb je aantekeningen gemaakt en aan de hand van die aantekeningen kan je de vragen beantwoorden.
- L: (*Lacht.*)
- D: Handig heh?
- L2: Precies hetzelfde?
- D: Je zou kunnen zeggen van hier...maak even je conclusie aan de hand van wat je hebt gelezen. Ja? (*Docent loopt naar groep Edison als iemand zijn aandacht vraagt.*)
- L3: Meneer.
- D: Zo komen jullie er een beetje uit?
- L2: Ik denk niet dat we dit halen tot tien.
- D: Nou, dat geeft niet.
- L3: Mogen we alstublieft twee minuten eerder weg?
- D: (*lacht en loopt weg*)
- L3: Anders moet ik door Leiden de hele tijd met m'n schooltas.

- D: Aaaahhh. (*Docent loopt langs groep Bell en luistert naar hun onderlinge discussie.*)
- D: Is er een onduidelijkheid?
- L1: Ja, bij bron zes komen we niet uit.
- L4: Wacht, redenen van fabrikanten, anders kon er geconcurrereerd worden door het buitenland.
- D: Ja. Ja. Heel goed. Dat is wel heel scherp van jou (naam L4). (*Docent loopt naar groep Einstein.*)
- D: Zijn jullie al helemaal klaar?
- L3: Ja.
- D: Laat eens zien dan, want eh?
- L1: Knap heh?
- D: Ik vind het wel goed. Die vragen ook al.
- D: (*Docent leest de antwoorden.*) Goedkoop, wendbaar. Hey hartstikke goed. Ja prima. Goed zo. (*Docent kijkt naar de tijd en gaat voor in de klas staan.*)
- D: (*Klassikaal.*) Ja uh, jongens en meiden, het is....sssshhhh....het is bijna tien uur dus we gaan....shh...jongens en meiden. Graag even de aandacht. We gaan deze opdracht afsluiten ook al ben je niet helemaal klaar. Ik heb gezien dat er echt overal goed is gewerkt. Uh jullie krijgen... (*Einde opdracht samenwerkend leren. De vragenlijsten worden vervolgens uitgedeeld.*)



## Appendix I: Transcript for Class 3 in Dutch

*(Start van het samenwerkend leren.)*

- D: Een geleerde. *(Tegen een leerling van groep Plato.)*
- L1: Heeft 'ie ook spinazie gemaakt? Of gekweekt?
- D: Nee, nee hij heeft niet spinazie gemaakt. *(Docent loopt naar groep Nietzsche.)*
- L: (...)
- D: Wat?
- L1: Waarom heet hij Niete?
- L2: Nietzsche.
- D: Nietzsche. Dat is ook een uh, dat is ook een Duitse filosoof.
- L1: Mogen we niet zelf een naam kiezen?
- D: Nee. *(Leerlingen praten door elkaar heen.)*
- D: Wacht even, jullie zitten je heel lang bezig te houden met een naam van het groepje...
- L2: Nee, maar ik snap het niet.
- D: Heb je de opdracht gelezen?
- L2: *(wifelend)* Ja. *(lacht)*
- D: *(lacht)* Ja, dat is wel handig om zo te antwoorden, ja.
- D: Op het moment dat je de bron hebt gelezen ga je deze vragen beantwoorden over de bron.
- L3: Maar moet je nu echt al dit lezen?
- D: Lees één bron, ga aan de gang met dit. En overleggen welk antwoord je opschrijft.
- L2: Deze opdracht maken of deze?
- D: Deze.
- L4: Ohhh.
- L2: Maar waar is deze dan voor?
- D: Dat is pas als je hiermee klaar bent. Maar ga aan de slag. Begin bij bron één. *(Docent wordt geroepen door een leerling van groep Socrates.)*
- L1: Meneer. Meneer. Mogen we al (...)
- D: Ja ja ja, je mag het al maken. Hierop maken trouwens eh...ja?
- L2: Oh daar. Ok. *(De docent loopt verder als er vanuit groep Kant achter in de klas ook om zijn aandacht wordt gevraagd.)*
- L1: Meneer, bron twee heeft helemaal niets met kinderarbeid te maken.
- D: Nee, dus niet elke bron heeft...kan jouw vragen beantwoorden.
- D: Maar, begin nou gewoon bij bron één.
- L1: Ja maar, iedereen heeft een eigen bron.
- D: Ja maar dat is weer taken verdelen.
- L1: Tuurlijk, dat is toch goed?
- L2: Dat is toch slim?
- D: Ok. Nou dan.
- L3: Het antwoord van die is 'snel een kneedbaar'.
- L2: (...)
- D: Dan zet je een streepje en ga je verder naar de volgende. *(De docent gaat snel verder. Vanuit groep Plato is er ook een vraag.)*
- L2: Meneer?
- D: Ja.
- L2: Hoe lang duurt dit, één les of?

- D: Ja, deze les zijn we daarmee bezig. Ja. (*Een leerling uit groep Erasmus vraagt naar de docent.*)
- L1: Meneer?
- D: Wacht even. (*De docent gaat op zijn bureau zitten en spreekt de klas klassikaal aan.*)
- D: Uh, ik zie sommige mensen heel goed bezig zijn, uh andere mensen, andere mensen en voornamelijk daar achterin die komen maar niet op gang. Het kan zijn dat je net nog een stoommachine bent heh, die moet altijd heel langzaam op gang komen. Maar ik verwacht wel een bepaalde houding bij zo'n samenwerkingsopdracht. Dus ga aan de slag.
- D: (Naam L1 uit groep Spinoza), eerste waarschuwing. (*Een leerling uit groep Erasmus stelt een vraag.*)
- L2: Meneer, de kinderen verdienen toch weinig want hier staat "niks".
- D: Volgens die bron zeggen ze dat ze aan het begin niks verdienen, mag je dat gewoon neerzetten. Maar uiteindelijk weten wij dat kinderen uiteindelijk veel minder gingen verdienen dan volwassenen. Maar bij sommige fabrieken kregen kinderen soms niks betaald als de vader maar kon blijven werken. Dat was soms zo. (*Een leerling uit groep Descartes vraagt iets door de klas heen aan de docent die nog steeds voor in de klas op zijn bureau zit.*)
- L1: Meneer, mag je hierop schrijven?
- D: Ja.
- L1: Moet dat?
- D: Op dat vel mag je schrijven (Naam L1).
- L1: Moet je daarop schrijven? Mag dat niet in je schrift?
- D: Hoe bedoel je in je schrift?
- L1: Gewoon antwoorden in je schrift.
- D: Nee, want je kan dat vel weer terug krijgen als je je naam erop zet.
- L1: Nee, ik doe het in mijn schrift.
- D: Nee maar de antwoorden moet je niet in je schrift zetten maar op het vel dat je hebt gekregen (Naam L1).
- D: (*Klassikaal*) Ik kom zo over vijf minuten langs om te kijken hoe ver iedereen staat. En tussendoor loop ik sowieso langs. (*De docent houdt overzicht, maar loopt naar groep Spinoza en spreekt L1 aan.*)
- D: Jij denkt volgens mij dat jij directeur bent.
- L1: Heh?
- D: Toch? Of niet?
- L1: Nee.
- D: Nou, maar ja je zit zo achterover zo van jongens eh.... Is het niet handig (Naam L1), dat kun jij denk ik heel goed, om de leiding te nemen en te zeggen: "Ok bron één wat gaan we daar nou uithalen, wat gaan we nou opschrijven." Ik zie hier....Als jullie tijdens de Industriële Revolutie in een fabriek zouden werken, bij een lopende band en er moest een auto in elkaar gedraaid worden daar, dan vraag ik mij af of er na een dag wel een auto in elkaar gedraaid zou worden met deze houding, want jullie zitten allemaal zo van eh... (*Docent slaat armen over elkaar en leunt achterover.*)...Nou het komt wel, het komt wel.
- L2: Huren we toch mensen?
- L3: Ja.
- L2: Is 'ie zo klaar hoor.
- D: Waar is dat opdrachtvel?

- L3: Ik snap er niks van.  
L2: En daarna neem ik die auto mee en dan...  
D: (*Houdt bronnenset omhoog.*) Zie je dit, zie je deze afbeelding?  
L2: Ja.  
D: Dat zijn jullie nu. Zo moeten jullie lopen, en dus werken.  
L2: Al die andere mensen doen gewoon het werk voor ons.  
L3: Dat zijn wij.  
D: Dit ben ik zeg maar in dit moment, maar ik heb geen zweep.  
L3: (...)  
D: Nee, ik heb geen zweep. Ik heb geen zweep zeg maar. Dus wat ik nu doe. Ik probeer jou toch weer aan het werk te zwepen.  
D: Nou ga aan de slag, want zo'n houding dat is niks (Naam L1). (*Docent loopt weg en krijgt een vraag van groep Socrates.*)  
L1: Meneer?  
D: Ja, (Naam L1).  
L1: D'er staat hier één met een fabrikant, maar...  
D: Niet alle bronnen geven antwoord... op die vragen, dus dan zet je niet van toepassing. Als je dat niet kunt vinden in de bron zet je niet van toepassing of zet je een streepje, ga je verder.  
L3: (...)  
D: Dan kun je daar... dan zegt 'ie daar dus blijkbaar niets over. Als jij vindt dat 'ie daar dus niets over zegt, zet je dat dan... zet je dat neer.  
L1: Ok.  
D: Ook die reden erbij. (*Docent loopt al weg, maar overheert iemand uit de groep wat zeggen en reageert.*)  
D: Nee het zijn in niet steeds dezelfde vragen. Ja, oh.  
L2: Bij bron één stonden wel de vragen hier.  
D: Ja.  
L2: Bij bron twee niet.  
D: Maar uh... oh zo bedoel je.  
L2: Ja, zo bedoel ik.  
D: Nou ja (*lacht*) ok. Dan zijn het in principe wel dezelfde vragen, maar uh, je moet elke bron weer op je eigen manier analyseren.  
L2: Ok. (*Docent loopt naar groep Nietzsche.*)  
L: (...)  
D: In bron één staat heel veel informatie, ik zie daar nog niet veel staan.  
L2: Maar (Naam L4) doet die.  
D: Oh, (Naam L4) doet dat. Is dat niet handiger om dat met elkaar te doen?  
L2: Nee, dit gaat sneller.  
D: Ok, ok. (*Docent wendt zich af en loopt naar groep Plato ernaast.*)  
D: Overleggen heh met elkaar...  
L: Ja.  
D: Daarvoor zit je samen. (Naam L1) die heeft nog niets. Ennuh (Naam L3) heeft wel wat opgeschreven, dus misschien is het handig om met elkaar te overleggen, wat schrijven we op gezamenlijk.  
L1: Oja.  
L2: Ok. Wat schrijven we op?  
L1: Wat schrijven we op?  
D: Ja. Je leest die vraag... je leest die bron, en dan denk je van ok wat gaan we eruit halen? Onderstreep dingen die belangrijk zijn desnoods.

- L1: Ik heb geen (...)
- D: Je kunt gewoon met een blauwe pen toch strepen, (Naam L1)? Dat kan.
- L1: Ja dat kan ja. (*Docent loopt verder en komt langs L1 in groep Descartes die in het eigen schrift bezig is en kijkt even mee.*)
- D: En jij doet het dan toch weer eigenwijs.
- L1: (knikt)
- D: Waarom?
- L1: Omdat ik eigenwijs ben. (*Docent loopt weg. En kijkt bij een aantal groepen. Dan komt hij weer bij groep Spinoza.*)
- D: Kijk (Naam L2), kijk... is hier uh... wie heeft de leidersrol op zich genomen hier?
- L3: (Naam L2).
- L2: Ja uh.
- D: Zie je nou. En jij bent zijn tweede baas en dat is de derde baas en dan gaat het toch.
- L2: (Naam L3), scheer je haar.
- L3: (...)
- D: Ik heb net verteld, dat is een microfoon. Dan kan die...
- L2: (Naam L3), scheer je haar.
- L1: Nee, nee, niet doen.
- L2: Ik ben hoger dan jou.
- D: Ik vind dat wel tof dat haar. Dat is weer anders als dat iedereen heeft.
- L2: Moet u voelen dat is echt vet.
- L3: (...) De kapper komt binnenkort weer dan gaat het denk korter worden.
- L: Ja hoe kort?
- D: Maar...
- L3: Nou kort.
- D: ...dit gaat nu niet over de in... Ga verder met de vragen.
- L2: (...)
- D: (Naam L2), ga verder met de vragen. (Naam L3), ga verder met de vragen. (*Docent draait zich om naar groep Plato.*)
- D: Wie is hier de directeur van dit hele samenwerkingsverband?
- L4: (*wijst*)
- D: Dat is (Naam L3).
- L4: Ik ben derde baas.
- D: Dan moet je zeggen: "jij bron twee aan de slag. Zoek het uit, dan gaan we overleggen of het goed is." Onderstreep dingen. Je moet dingen wat organiseren. (Naam L1) dat kan jij ook doen.
- L1: Kijkt u nou mij aan?
- D: Ja nou jij kan het ook doen.
- L1: Oh.
- D: Jij zit helemaal zo afwachtend van nou...
- L1: (...)
- L4: Maar zij denkt heel veel.
- D: Nou dat...
- L: (...)
- D: Ja je kan een denker zijn, maar bij deze opdracht moet je juist veel dingen doen. (*Docent loopt door naar groep Kant.*)
- L3: De reden voor of tegen afschaffing. Ja hetzelfde als bij één en bij vier.
- D: Nou hier is 't wel duidelijk wie de directeur is, denk ik.

- L1: Ja ik.  
D: (Naam L3) en (Naam L1) denk ik.  
L1: Kleintjes die regeren.  
D: (*lacht*)  
L1: Dat is toch zo. Mijn vader die is ook klein.  
D: Napoleon was ook klein.  
L1: Ja, dat bedoel ik.  
L3: Dat is eigenlijk een kleine lul.  
L1: Zit in de genen.  
D: Dat was uh weer zo'n toevoeging die uh, die uh...  
L1: Nergens op sloeg.  
D: Nergens op sloeg ja.  
L2: Maar die ging wel met een caravan en zijn hele boekhouding naar Dordrecht.  
L1: (...)  
D: Nee maar uh kleine mensen hebben vaak ook een grote mond. Net als uh, net als mensen die uh vaak wat gezet zijn, die zijn weer gezellig over het algemeen.  
L1: (...)  
D: Ik vind je niet zo gezellig nu.  
L1: Nee, maar ik ben ook niet gezet.  
L2: Zeg maar die man op die bron met die zweep.  
D: Dat ben ik, dat ben ik.  
L3: Helemaal niet.  
L2: Dan bent u echt een kinderslaaf...een kinderslaaf-directeur.  
L3: Meneer wat is dit?  
D: (Naam L2), had je jezelf niet in die rij herkent hiero.  
L3: Ja, ik sta hier.  
L2: (...)  
L1: Meneer, waarom is dat?  
D: Dat is een microfoontje, uh... (*Docent loopt weg.*)  
L1: (*Leerling vraagt door de klas.*) Meneer, waarom dan?  
D: Wat? Vanwege het onderzoek van Roxanne. Ja? (*De docent richt zich tot groep Erasmus.*)  
D: Gaat het goed hiero?  
L3: Ja.  
L1: Ja hoor, prima.  
D: Maar ik zie hier uh...kijk....ok jullie zitten wel wat gedraaid.  
L3: Maar we werken samen...we zijn gewoon opgesplitst.  
L1: We zijn opgesplitst.  
D: Ik zie wel dat er heel veel tempo in zit. Dat vind ik heel goed.  
D: Wie is hier de organisator van het hele geheel? (*L3 stuitert op en neer ter bevestiging.*)  
L2: Nou ja, allemaal.  
D: Ok.  
L2: We doen allemaal ons eigen stukje.  
D: Heel bescheiden ook de reactie van uh... (*lacht*)  
L4: (...)  
D: Nee, dat heeft niks met arrogantie te maken. Dat zeg ik helemaal niet.  
L4: Ik ben zelfverzekerd.  
D: Ik zeg ook niet dat het arrogant is, dat zeg jij.

- L4: Nee, maar...nee.
- D: Maar de reactie was mooi van...wie is verantwoordelijk en dan zij heel bescheiden van iedereen eigenlijk wel. Ik vind...bescheidenheid siert mensen vaak. Niet té bescheiden heh zijn, niet té bescheiden. (*De docent loopt door naar de volgende groep, groep Aristoteles die al de hele tijd tamelijk stil aan het werk is.*)
- D: Nou eh, hier eh... Jullie zouden zo in de tijd van de Industriële Revolutie eh aan de lopende band goed werk verrichten, want het gaat allemaal prima hiero.
- L1: Krijgen we ook betaald?
- D: Nou ja, eh wat heb je uit de tekst opgemaakt?
- L1: Ja.
- D: Nee. Ze kregen niks betaald.
- L2: Wij wel, want wij zijn geen (...)
- L1: Ik ga het opzoeken.
- D: Nee, uit die tekst blijkt dat ze niks betaald kregen. Bij die baas niet. Bij andere bazen krijgen ze wel eens wat betaald. (*Docent roept door de klas naar L2 van groepje Spinoza.*)
- D: (Naam L2 groepje Spinoza), zachter. (*Docent spreekt L1 van groepje Spinoza aan door de klas.*)
- D: Daar bereik je niks mee met zo'n glimlach (Naam L1), bereik je niks mee. Weet je waar je wat mee bereikt?
- L1: Nou?
- D: Werken bij mij in de les.
- L1: Ja?
- D: Dan bereik je iets. (*Leerlingen in groep Erasmus reageren.*)
- L4: Meneer, krijgen we een plusje?
- D: Wat zeg je?
- L4: Krijgen we een plusje?
- D: Een plusje? Hoh! Een plusje. Denk je dat je een plusje zo makkelijk verdient?
- L4: (..)
- L2: We werken heel hard.
- D: Jullie krijgen iets anders.
- L4: Wat dan?
- D: Kan ik niet zeggen.
- L: (...)
- D: Geen muffin hoor, geen muffin (*lacht*).
- L2: Meneer dan wil ik een plusje.
- D: Maar uh...in zo'n zak zitten er meerdere snoepgoed. Volgens mij, je, tis nog niet zo dat jij een bounty niet lust?
- L2: Die mag ik niet.
- D: Ook niet?
- L2: Ik mag alleen maar Kitkat.
- D: (*Docent richt zich tot onderzoekster.*) Zit er Kitkat in? Zit er Kitkat in? In die zak? Ik weet niet. Nou ja, we verzinnen wel wat. (*Docent loopt verder. L2 uit groep Aristoteles reageert.*)
- L2: Kitkat zitten toch ook noten in?
- D: Wat?
- L2: Kitkat zitten toch ook noten in?
- D: Ik weet het niet, volgens mij niet. Maar ik uh, (Naam L2 uit groep Erasmus) weet het beter, beter dan ik.

- L1: Wie is (Naam L2 uit groep Erasmus)?
- D: Oja, foutje. (*De docent reageert kort op iets dat hij naast zich hoort uit groep Descartes.*)
- D: Wat is er?
- L1: Nee niks, laat maar. (*Vervolgens gaat het gesprek met groep Aristoteles weer verder.*)
- L2: Wat is zijn naam dan? (*Er valt een lange stilte.*)
- D: Nou, moet ik even kijken.
- L2: U bent diep gezonken.
- D: Wat is er (Naam L2) dan?
- L2: Niks.
- D: Ja, wat is het dan?
- L2: (Juiste naam L2 uit groepje Erasmus.)
- D: (*knikt*)
- L1: Oja.
- L2: Wij moeten altijd maar het werk doen voor leraren, maar als ze niet eens onze naam weten..
- D: Respect.
- L1: Meneer (Naam andere docent), die haalt ook altijd alles uit de lijst. En dan zegt 'ie mensen die er niet zijn en dat vind ik zo irritant. (*Docent loopt verder, een leerling uit groep Nietzsche steekt een vinger op.*)
- D: Je mag wel iets vragen?
- L1: Nee. (*Docent loopt weer verder en wijst L3 van groepje Spinoza op zijn houding.*)
- D: Ga goed zitten. Ga goed zitten. (*De docent houdt voor in de klas overzicht. En spreekt van vooruit de klas L2 van groepje Spinoza aan op gedrag.*)
- D: (Naam L2). Wil jij vegen jongen?
- L2: Nee.
- D: Nou dan. Raap die zooi op. (Naam L2), ik heb je iets gevraagd. Raap jij het even op. (*Docent loopt naar achteren, en corrigeert L1 van groepje Descartes die is afgeleid.*)
- D: Ga aan je opdracht. (*De docent loopt verder naar groep Nietzsche waar een leerling een vraag heeft.*)
- L1: Nou, we snappen die laatste vraag niet.
- D: (*Docent leest de vraag.*) "Redenen voor of tegen afschaffing van kinderarbeid." Wat waren bijvoorbeeld redenen waarom mensen kinderarbeid gingen afschaffen? Welke beweegredenen hadden ze? Deden ze dat zomaar of dachten ze van nou... Kan je dat halen uit de bron? Dat willen ze weten.
- L1: Oh. En als dat niet kan, zeg je nee?
- D: Nou ja, misschien kun je een reden voor de afschaffing noemen en een reden tegen de afschaffing. Wat zou nou een reden zijn om voor kinderafschaffing te zijn? Dat kinderen moeten gaan leren bijvoorbeeld.
- L1: Ja.
- D: Wat zou een reden tegen kinderafschaffing zijn? Als je werknemer bent?
- L1: Ja slecht.
- D: Ja, want dan raak je je werknemers kwijt. Of die goedkope werknemers kwijt.
- D: Dus dat kun je opschrijven. (*De docent gaat weer voor in de klas op zijn bureau zitten.*)
- D: (*Klassikaal.*) Uh, (Naam L1 groepje Spinoza). Uh, let op jongens. We hebben nog uhm. Shhhht. Uh, (Naam L1 groepje Descartes). Ik wil even aandacht,

want anders uh. (Naam L1 groepje Spinoza). Stop even met praten en uh zorg even dat je goed mij kunt horen. Dus uh ik wil eigenlijk uh proberen dat je mij aankijkt, want dan weet ik zeker dat het aankomt. Wat gaan we zo doen? We hebben nu nog een kwartier. Uh...jullie moeten nog een vragenlijst invullen. Ik stel voor, dat we binnen nu, nou ja...zo nadat ik heb gesproken. Uh, uiteindelijk neem je je eigen blaadje mee. Die leg je straks op de rand van je tafel, die wordt weer opgehaald. Als je die terug wilt zet je de naam d'er op en dan krijg je hem uiteindelijk weer terug van mij. Vervolgens krijg je van Roxanne een vragenlijst. Die ga je zelfstandig. (Naam L in groep Nietzsche)?

L: Ja.

D: (*Klassikaal.*) Zelfstandig ga je die maken en invullen. Uh, en als je klaar bent pak je iets voor jezelf waar je buurman en waar ik ook uh, geen last van heb. (Naam zelfde L in groep Nietzsche)? Probeer eens te herhalen wat ik net heb gezegd. Dan weet ik, als het bij jou is aangekomen, verwacht ik dat de rest het ook weet.

L: (*Andere leerling uit de klas reageert.*) Ik weet het niet.

D: Sshhhht.

L: (*Uit groep Nietzsche.*) Nou naar je eigen plek en dan (...)

D: (*Klassikaal.*) Juist. En dan krijg je een vragenlijst en die ga je zelfstandig invullen. Uh, ok. Ik stel voor dat je dat nu gaat doen. Dus, ga terug naar je eigen plek. Neem je blaadje mee. (*De opdracht is afgelopen, en de leerlingen staan op en gaan zitten op hun eigen plek in de klas. Als iedereen zit worden de vragenlijsten uitgedeeld.*)