



Collaborative learning practices: teacher and student perceived obstacles to effective student collaboration

Ha Le, Jeroen Janssen & Theo Wubbels

To cite this article: Ha Le, Jeroen Janssen & Theo Wubbels (2018) Collaborative learning practices: teacher and student perceived obstacles to effective student collaboration, Cambridge Journal of Education, 48:1, 103-122, DOI: [10.1080/0305764X.2016.1259389](https://doi.org/10.1080/0305764X.2016.1259389)

To link to this article: <https://doi.org/10.1080/0305764X.2016.1259389>



© 2017 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 13 Jan 2017.



[Submit your article to this journal](#)



Article views: 163912



[View related articles](#)



[View Crossmark data](#)



Citing articles: 95 [View citing articles](#)

Collaborative learning practices: teacher and student perceived obstacles to effective student collaboration

Ha Le, Jeroen Janssen and Theo Wubbels

Faculty of Social and Behavioural Sciences, Department of Education, Utrecht University, Utrecht, The Netherlands

ABSTRACT

While the educational literature mentions several obstacles affecting the effectiveness of collaborative learning (CL), they have often been investigated through the perceptions of only one actor, either teachers or students. Therefore, some sources of obstacles that teachers and students encounter may not have been revealed. In this study, 19 teachers and 23 students in different disciplines at a pre-service teacher education faculty at a university in Vietnam were interviewed. In total, 47% of the teachers taught science subjects and 53% taught social subjects; 35% of the students majored in science subjects, 57% in social subjects, and 8% in primary education. With regard to study cohorts, 22% of the students were in the first and second year while 78% were in the third and fourth year of their four-year bachelor's programme. These programmes produce qualified teachers for primary and secondary schools nationwide. Based on grounded theory analysis, four common obstacles to collaboration were identified: students' lack of collaborative skills, free-riding, competence status, and friendship. Furthermore, the results showed three interrelated antecedents that contribute to these obstacles. Central to the antecedents is the strong focus of the teachers on the cognitive aspects of CL, which led the participating teachers to neglect the collaborative aspects of CL. These antecedents were demonstrated in the ways teachers set CL goals, provided instruction, and assessed student collaboration. This study may be useful for educators, designers, and researchers to foster the quality of student collaboration.

ARTICLE HISTORY

Received 28 February 2016
Accepted 18 October 2016

KEYWORDS

Collaborative learning;
pedagogical practice;
teacher perceptions; student
perceptions

Introduction

Collaborative learning (CL) can be defined as a set of teaching and learning strategies promoting student collaboration in small groups (two to five students) in order to optimise their own and each other's learning (Johnson & Johnson, 1999). To achieve this purpose,

CONTACT Ha Le  h.lenhungocha@uu.nl

© 2017 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

teachers have tried to organise different types of collaborative activities in their classroom teaching. In this paper, we report on teacher and student perceived features of collaborative activities that teachers have implemented to foster student collaboration. Over the last decades, research has demonstrated that CL can promote academic and social educational outcomes (Johnson, Johnson, & Smith, 2007; Slavin, 1996). However, research also shows that the implementation of CL is not always adequate in daily classroom practice. For example, even though teachers organise different types of student groupings (e.g. heterogeneous or homogeneous according to ability or gender), they do not always structure these group interactions to foster effective collaboration (Baker & Clark, 2010; Blatchford, Kutnick, Baines, & Galton, 2003). When examining the effectiveness of CL, researchers have noted challenges that students experience such as unequal individual participation in group tasks (e.g. Freeman & Greenacre, 2010; Janssen, Erkens, Kanselaar, & Jaspers, 2007), and students' lack of communicative and collaborative skills (e.g. Li & Campbell, 2008; Pauli, Mohiyeddini, Bray, Michie, & Street, 2008). Similarly, teachers also encounter challenges while organising collaborative activities, such as designing appropriate group tasks, composing groups, managing class time (Gillies & Boyle, 2010), and enhancing and monitoring productive collaboration (Hämäläinen & Vähäsantanen, 2011; Van Leeuwen, Janssen, Erkens, & Brekelmans, 2013).

Studies on the application of CL until now have investigated challenges perceived by only one actor, either teachers (e.g. Gillies & Boyle, 2010) or students (e.g. Popov et al., 2012). By focusing solely on teachers or students, the underlying antecedents of problems that teachers and students encounter during CL and the consequences of these problems have not been explored comprehensively. For example, understanding the commonly mentioned problem of free-riding (Dommeyer, 2007; Popov et al., 2012) requires investigating decisions teachers make while constructing collaborative tasks (e.g. deciding to incorporate individual accountability and positive interdependence or not; cf. Roseth, Johnson, & Johnson, 2008) and how these decisions subsequently affect students' perceptions of the collaborative task and the collaborative behaviour this elicits (e.g. deciding to participate less than other group members because the task is not perceived to be a true group task that requires the input of all group members; cf. Janssen et al., 2007). Hence, our study extends previous work in two ways. First, we investigate multiple obstacles that affect the collaborative process perceived by both students and teachers. Previous studies focused either on one obstacle instead of multiple (e.g. Freeman & Greenacre, 2010; Ross, 2008), or investigated obstacles only from the perception of either the teachers (e.g. Abrami, Poulsen, & Chambers, 2004) or the students (e.g. Chiriac & Granström, 2012). Second, we explore possible antecedents that might help on explaining the identified obstacles. This is important because understanding possible causes of ineffective collaboration can help teachers to promote more successful and enjoyable CL experiences.

Problems students encounter when collaborating in groups

Research has shown that students encounter several problems during collaboration (Janssen et al., 2007; Kreijns, Kirschner, & Jochems, 2003). In this section, we exemplify students' lack of collaborative skills as one of the common problems reported in the CL literature at various levels of education. Barron (2003), investigating the collaborative interactions of primary school children, found low-quality coordination among group members when they participated in problem-solving tasks. Her study showed that group members did not pay attention to others' opinions, interrupted them, and rejected alternative suggestions without

justification. These inappropriate behaviours inhibited group functioning and individual learning. Furthermore, Ross (2008) noted that the quality of students' explanations in group interaction in primary and secondary classrooms is often below a level that enables shared knowledge construction. Additionally, help-seekers may be unable to formulate effective requests for help. As a result, both help-givers and help-seekers may be unable to collaborate effectively. Ross (2008) also indicated the quality of group discussions as a frequent problem for most primary and secondary school students. In the higher educational context, Popov et al. (2012) showed that communication problems, caused by a lack of collaborative skills, may inhibit first-year students in their master's programme from engaging in group work and contributing to group outcomes. Taken together, these studies suggest that lack of collaborative skills may be one of the antecedents of the collaborative problems students often experience during CL (Gillies, 2006; Webb, 2009). Further research is, however, needed to uncover whether lack of collaborative skills is the only or the most important antecedent to students' collaborative problems.

Problems teachers encounter when applying collaborative learning

Earlier studies (Chiriac & Granström, 2012; Hämäläinen & Vähäsantanen, 2011) have identified several problems that teachers encounter when applying CL in the classroom. We explain two problems affecting CL effectiveness: organisation of collaborative activities, and assessment of learning.

First, teachers often face challenges while structuring collaborative activities such as monitoring students' on-task behaviour, managing group-work time, providing relevant materials, assigning individual roles, and establishing teamwork beliefs and behaviours (Gillies & Boyle, 2010). A study by Ruys, Van Keer, and Aelterman (2012), which analysed preparation of collaborative activities of pre-service teachers, revealed insufficient attention of teachers to organising collaborative work such as determining group norms and facilitating activities. Furthermore, research demonstrated that a large number of primary and secondary school teachers often place students in groups and let them work together without preparing students to perform collaborative activities productively (Blatchford et al., 2003).

Second, teachers frequently find it difficult to assess students' performance and achievements as they implement CL in classrooms at all levels of education (Strijbos, 2011). For example, teachers at some primary and secondary schools showed uncertainty and ambiguity about what and how to assess (Frykedal & Chiriac, 2011). Also, a study by Chiriac and Granström (2012) reported that the criteria or rules for assessment lacked transparency and concreteness. Furthermore, the lack of assessment tools to measure collaborative performance of every group member may cause student disappointment about the transparency and evenness of the assessment (Strom & Strom, 2011).

Although previous studies highlighted several problems teachers encounter when applying CL, these studies have insufficiently elucidated the underlying causes or antecedents of these problems (e.g. Gillies & Boyle, 2010; Lopata, Miller, & Miller, 2003). Furthermore, the problems that teachers encounter will likely also affect collaborating students. This relationship between problems experienced by teachers and by students is, however, rarely addressed during previous research. If teachers, for example, are unsure about how to monitor students' group discussions, and cannot adequately intervene when necessary or model appropriate collaborative behaviour, this will probably affect the quality of the collaborative

process as experienced by students (Van De Pol, Volman, & Beishuizen, 2011; Van Leeuwen et al., 2013; Webb, 2009).

The present study

Previous studies identified common problems perceived by either teachers or students, but an integrated understanding of the obstacles to effective CL is lacking. Therefore, potential causes of these problems may have been overlooked. To address these problems, the aims of the present study were to complement previous work by investigating multiple obstacles that may hinder the process of CL and possible antecedents that may contribute to the identified obstacles. These obstacles were examined through the perceptions of both teachers and students. CL literature also showed that many problems faced by teachers and students have been investigated in different levels of education (e.g. primary, secondary, higher education), from diverse subject areas (e.g. economics, social studies, mathematics), and across varied national contexts (e.g. Europe, America, Australia, Asia). In addition to the previous work, our research was carried out at a teacher education faculty at a university in Vietnam, a country in Asia where CL has recently gained favour (Koh, Tan, Wang, Ee, & Liu, 2007; Nguyen, Terlouw, & Pilot, 2012). Although there was little formal research on the implementation of CL in Vietnam, a few studies (e.g. Nguyen, 2008; Pham, 2010) showed that Vietnamese teachers and students prefer applying collaborative activities in the classroom (i.e. Student Teams Achievement Divisions, Group Investigation, Jigsaw, Think–Pair–Share, Role play, Question and Answer, etc.) since participating in these activities improves students' collaborative skills. In the present study, we answered two research questions:

- (1) What obstacles to effective collaboration do teachers and students perceive during the process of CL?
- (2) What antecedents can explain the obstacles perceived by teachers and students?

Methodology

A qualitative study based on interviews with teachers and students meets the requirements, principles and procedures of the institution where the research was conducted. In addition, because this study is part of the doctoral research at Utrecht University, our study followed the ethical guidelines of the Netherlands Educational Research Association, for example, informed consent (i.e. the researcher provided the teachers and students with written information such as the goals and procedure of the study, and all the participants consented to participation) and anonymity (i.e. the researcher ensured the participants' interview statements could not be traced back to them).

Participants

The participants were 19 teachers (14 female, five male) (T1 to T19) and 23 students (15 female, eight male) (S1 to S23) who voluntarily joined the interviews. These teachers and students were chosen from different disciplines at a pre-service teacher education faculty at a university in Vietnam. In total, 47% of the teachers taught science subjects (biology, physics, chemistry, and mathematics) and 53% taught social subjects (English language,

Vietnamese literature and geography). Teachers' teaching experience ranged from 3 to 30 years ($M = 11.9$, $SD = 7.7$); 22% of the students were in the first and second year while 78% were in the third and fourth year of their four-year bachelor programmes of pre-service teacher education. These programmes produce qualified teachers for primary and secondary schools nationwide; 35% of the students majored in science subjects (physics, mathematics, and information technology), 57% in social subjects (English language and Vietnamese literature), and 8% in primary education. The participants were chosen through a combination of purposeful and snowball sampling. These sampling techniques enabled us to select candidates from different subject areas and study cohorts. Pre-selected teachers were asked to introduce teacher candidates who were perceived as active in applying CL and were teaching different subjects. Pre-selected students were also asked to recommend student candidates from different majors or study cohorts and with prior experience of working in groups. There was no purpose to select students specifically from these teachers' classrooms.

Interviews

Teachers and students were interviewed using a semi-structured interview protocol. Main interview themes included goals of CL, student preparation for collaboration, the collaborative process, and assessment of learning. Along with these main topics, the researcher asked the participants whether they had encountered any problems during the process of CL. Examples of interviewing questions are: 'In your opinion, what are the goals of CL?', 'How are students prepared for collaboration?', 'How do students work together in their groups?', 'How is group learning assessed?', and 'Do you have any problems during the process of CL? If yes, what are they?' At the end of each interview, the researcher asked the participants whether there were any other problems associated with student collaboration, and whether they had any other concerns about CL practice (see Appendix for the list of questions administered in the first wave of interviews).

To prepare for the actual interviews, a pilot study was conducted on four teachers and two students. In the design, the participants were split into three waves as follows: five teachers and four students, seven teachers and 11 students, and seven teachers and eight students, respectively. For each wave, the researcher conducted individual face-to-face interviews with the participants and carried out data analysis subsequently. Because the data collection was an iterative process, interview questions were adapted slightly in each successive wave. This adaptation made the provisional codes and/or patterns in the previous round(s) of data analysis become more obvious in the following round(s). Results from a previous wave were checked with respondents in a next wave.

Data analysis

We applied a grounded theory approach to analyse the interview data (Glaser & Strauss, 2012) with the aid of Nvivo10® (QSR International Pty, Doncaster, Victoria, Australia). Through the three waves, we conducted repeated cycles of collecting data, analysing data and visualising preliminary results. Within each cycle, we applied open, axial and selective coding and modelling (Boeije, 2010, p. 90). In particular, based on data from the first wave, open and axial coding were used to explore the properties of predetermined categories, the 'sensitising concepts'. These categories were identified from the CL literature, including

goals of CL, student preparation for collaboration, student performance during CL, and assessment of CL. As a result of open and axial coding, the first code tree was created. We then visualised our interim results using a tentative model to represent the relationships between the thematic categories. Subsequently, we conducted the second wave of data collection. The analytical process (i.e. open and axial coding) was then reiterated to make up

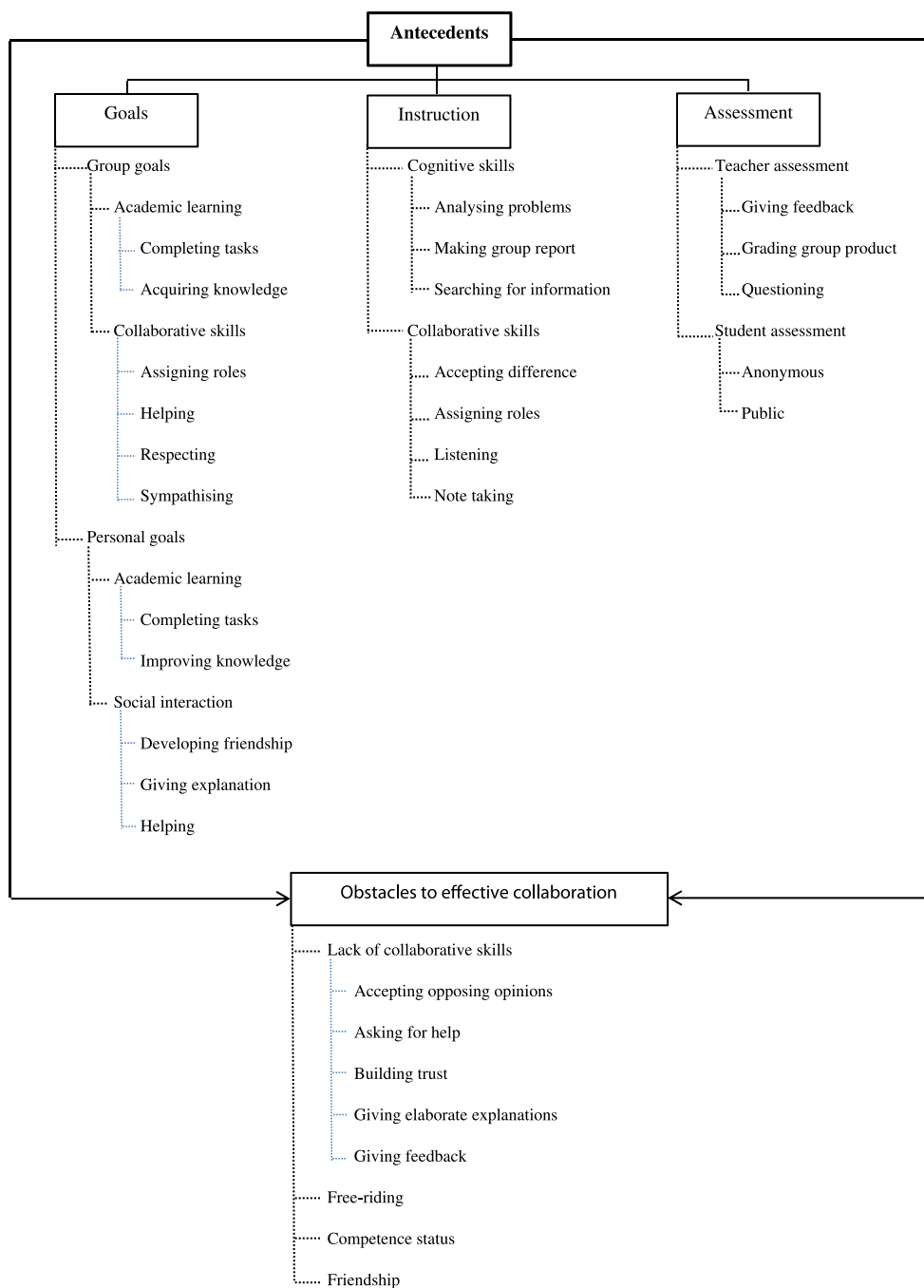


Figure 1. Final code tree of student perceptions on the implementation of collaborative learning.

the second code tree in which each category or code was compared with that of the first code tree in order to discover similarities and differences. Codes including the same meanings were merged while some other codes were split into sub-codes based on different meanings. Similarly, the third wave of data gathering was done and followed by the same analytical process. In addition, in this stage selective coding was used to determine the ‘core category’ and its links with other thematic categories. For each round of data analysis, preliminary findings and initial codes were discussed with a second researcher to check data interpretation and code descriptions. Labels of categories and the visualisation of findings (i.e. the proposed model) were repeatedly discussed and revised. Categories illustrated in the model were checked for every wave with randomly selected participants to see whether these had been interpreted correctly, and these participants confirmed all categories. Figure 1 displays our final code tree of student perceptions on CL application.

Results

Based on teachers’ and students’ reports, we found four frequently occurring obstacles to effective collaboration and three antecedents that might help explain the obstacles. By frequently occurring obstacles, we mean obstacles that were mentioned by a significant number of students and teachers (about 20% of the participants, see Table 1). As shown in Figure 2, central to these antecedents is the strong focus of most teachers and students on the cognitive aspects of CL (indicated by bold rounded rectangles), and their low attention to the collaborative aspects (indicated by dotted rounded rectangles). This imbalance in their attention (see further in section ‘Antecedents explaining obstacles to the process of collaboration’) was reflected in the ways teachers set CL goals, neglected to instruct students in essential collaborative skills, and assessed collaboration. As a consequence, these inter-related antecedents may negatively affect student collaboration. Students merely aimed to achieve individual academic learning and neglected the importance of social interaction. When both teachers and students do not pay a lot of attention to the collaborative aspects of CL, they may experience a number of obstacles to the effectiveness of CL, which will be described in the section below.

Obstacles to effective collaboration

Table 1 shows four common obstacles that students reported encountering during collaboration: lack of collaborative skills, free-riding, competence status, and friendship. These

Table 1. Obstacles to effective collaboration reported by students and teachers in three waves of data collection.

Obstacles	Students (n = 23)				Teachers (n = 19)			
	Wave 1	Wave 2	Wave 3	Total	Wave 1	Wave 2	Wave 3	Total
Lack of collaborative skills	4	11	8	23	5	6	7	18
Free-riding	2	10	6	18	4	4	5	13
Competence status	4	3	3	10	2	4	4	10
Friendship	1	3	2	6	2	0	0	2
Others (e.g. lacking academic knowledge, large class, time constraints, different personal styles)	1	1	2	4	1	0	0	1

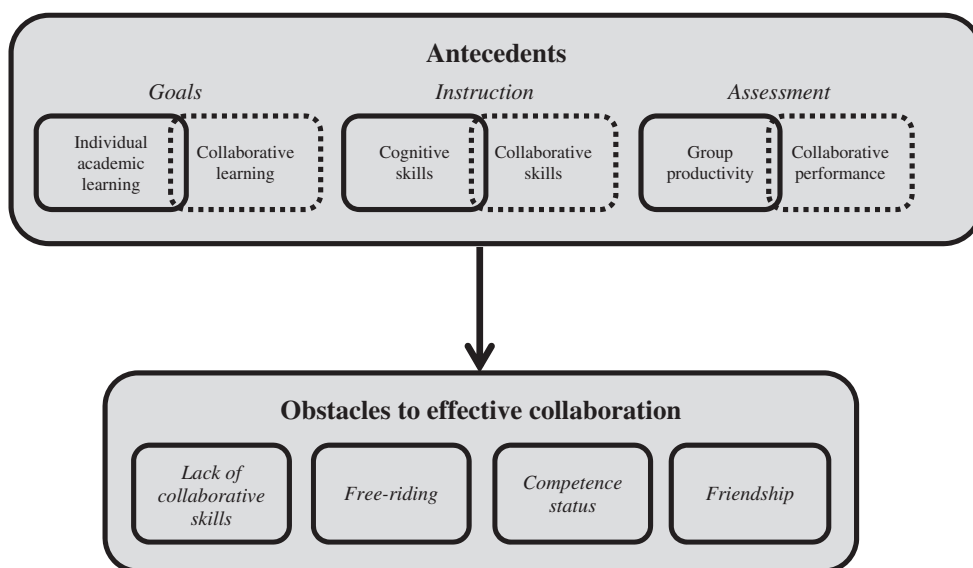


Figure 2. Antecedents explaining obstacles to the process of student collaboration.

obstacles are presented based on the frequency with which they were mentioned in the interviews with students and teachers.

Lack of collaborative skills

All students agreed that, when they started to work in groups, they did not know how to collaborate effectively. Their lack of collaborative skills such as accepting opposing viewpoints, giving elaborate explanations, providing and receiving help, and negotiating (see Table 2) prevented them working productively in groups. Only seven out of 23 students recognised that they did not coordinate their group activities effectively, such as planning a course of actions for group members to finish in time and to support each other's progress.

In agreement with the students, 18 out of 19 teachers reported that their students predominantly did not know how to use collaborative skills effectively. A typical teacher comment was, 'Students haven't been instructed to work in groups at primary and secondary schools. Most of them don't know how to work together effectively. Some rarely share their opinions, while others defensively argue for their idea' (T14).

Free-riding

The second obstacle to effective collaboration was free-riding. More than two-thirds of the students (18/23) indicated that, when collaborating on group assignments, some peers contributed most, while others worked less, and some did not even put in effort when completing their own tasks. This negatively affected students' collaborative experiences. An example was, 'I was dissatisfied because some fellows didn't care about our group tasks; they didn't contribute much to the group' (S15). Consistent with the students, two-thirds of the teachers (13/19) recognised the free-riding problem, for instance: 'My biggest concern is the unequal participation in group tasks. However, I can't exactly rate their individual contributions. Maybe low-contributing members still get the same grade as others' (T16).

Table 2. Lack of collaborative skills reported by students during collaboration in three waves of data collection.

Collaborative skills	Students (<i>n</i> = 23)				Examples of students' statements
	Wave 1	Wave 2	Wave 3	Total	
Accepting opposing viewpoints	4	10	4	18	'My friend said my idea was wrong, but I thought it was right. We argued defensively, but we didn't really think over the alternative ideas' (S4)
Giving elaborate explanations	4	7	6	17	'I understood the point, but I couldn't explain it clearly for my group members to get it' (S6)
Asking for help	3	6	3	12	'Some students don't want to expose their lack of understanding to others. I think they feel embarrassed' (S1)
Providing help	4	4	3	11	'Less competent students are often shy. So, I often hesitate to ask whether they need help' (S19)
Negotiating	3	2	3	8	'We had different solutions to the problem, but we failed to come to an agreement. So we often had to randomly choose one option' (S8)
Coordinating group activities	3	2	2	7	'Our big problem was that we started working without planning work and time to finish the task. We didn't often check progress of each other's work, so we often delayed work until the deadline' (S17)
Listening attentively	0	6	0	6	'While I was talking, a friend of mine interrupted me by saying he already got my ideas. He didn't seriously listen to me' (S5)
Giving feedback	1	2	2	5	'We often didn't clarify good and bad sides of an opinion, we generally accepted it. So, we couldn't reflect on the answers' (S2)

According to students, free-riding had a negative impact on the learning behaviours of all group members. For example, high-contributing members did not use time to help others: 'I couldn't help my friend with our task, I completed it myself because I was afraid the work couldn't be finished in time' (S6) nor did they learn from their working group: 'I always did more than half of group work. I felt tired and useless since I didn't have time to reflect on what I learned' (S11). On the other hand, low- and non-contributing students struggled to catch up with others. A student commented: 'Some less competent students felt marginalised since brighter peers did most of the work, while they did just a little. They found it hard to participate in group talk' (S5). The others, however, intentionally withheld their responsibility from group tasks: 'Non-contributing members are irresponsible. They ignored group tasks. They thought someone would complete the tasks for them' (S21).

Competence status

Third, competence status was found to be another obstacle to effective CL. Although the participants reported this problem less often (i.e. 10 teachers and 10 students), it consistently occurred throughout the three waves of data collection. Ten students reported that high-status students in their learning groups were generally believed to be active, competent or senior. They were often influential members whose ideas were mostly accepted by the majority of their fellow group members without dispute. Therefore, they tended to underestimate the intellectual capacity of low-status members, thus dominating the group. An example of this uncooperative behaviour voiced by a high-status student was, 'I was not completely confident to assign tasks for less able members, so I did most of the important

work such as analysing the problems, synthesising relevant materials and writing our report' (S14). Meanwhile, low-status students were generally thought to be passive, less competent or junior. Their opinions were not valued as much as others'; hence, they felt inferior and were not confident to talk. 'Less able students thought their ideas were not good, so they didn't feel safe to share' (S13). Teachers perceived that students did not have equal chances to express their thinking and to contribute fully to group tasks, though the students with perceived high status did not always perform better than the low-status students. An example of this opinion was, 'Sometimes students shared great ideas with me, but they didn't dare to talk in their group because they thought their ideas were worse than those of their brighter peers' (T13).

Friendship

Only six out of 23 students verbalised that friendship relations in groups were an obstacle to effective collaboration, but the students in all three waves mentioned this. They described that feelings of friendship in the group sometimes inhibited them from working seriously and constructing good arguments. A typical reflection was, 'In friendship groups, we became less self-disciplined and critical. For example, a student came late for our regular meetings, or forgot to do her tasks, but we didn't criticise her because we didn't want to ruin our friendship' (S1). Another detrimental effect of friendship in groups was students' off-task behaviours without taking time management and group planning into consideration: 'In our group meetings, we often talked outside the assigned topic while failing to plan in advance. It was time-consuming and unproductive' (S22). Only two teachers talked about this obstacle. One teacher said, 'Since students have good feelings about each other, they are easily distracted by sharing their social life stories. If they don't plan their work and manage time well, they won't complete tasks effectively' (T1).

Antecedents explaining obstacles to the process of collaboration

In this section we demonstrate three interrelated antecedents (see Tables 3 and 4) that may contribute to the observed obstacles.

Goals of collaborative learning

All teachers acknowledged that their goals for using CL were to develop both cognitive and collaborative skills for students. Teachers' common opinion was, 'By working in groups students can improve problem-solving and helping skills' (T3). However, in practice, only five teachers explicitly mentioned collaborative goals. Meanwhile, 14 out of 19 teachers did not integrate their perceived CL goals into the course objectives, although CL was applied in every lesson. They solely talked to students about the goals of their particular course such as acquiring academic knowledge and completing the assigned tasks. Noticeably, they did not explicitly mention the collaborative aspect of CL goals in which students should enhance social interaction and advance social and collaborative skills.

Three reasons for not setting collaborative goals of CL came out from the teachers' stories. First, all teachers considered CL a means for achieving the course aims. A typical statement was, 'CL is an effective instructional method that we use to help students grasp knowledge and solve tasks quickly in groups' (T3). Sixteen out of 19 teachers reported that they emphasised cognitive achievement more than social outcomes. An example was, 'I

Table 3. Antecedents of obstacles as reported by teachers in three waves of data collection.

Antecedents	Teachers (<i>n</i> = 19)			
	Wave 1	Wave 2	Wave 3	Total
Goals				
Explicitly informing goals of CL (i.e. students can improve academic knowledge, cognitive and collaborative skills)	1	3	1	5
Solely informing the course objectives (e.g. students can improve individual academic learning)	4	4	6	14
Acquiring course-related knowledge	4	4	6	14
Completing the assigned tasks	4	4	6	14
Instruction				
Collaborative skills	5	4	2	11
Assigning roles for group members	4	4	1	9
Listening to others and taking notes	4	2	1	7
Accepting different viewpoints	2	2	3	7
Giving feedback constructively	2	1	1	4
Cognitive skills	5	4	5	14
Making an oral or written report of group product	5	4	3	12
Analysing problems	3	4	5	12
Searching for information	1	3	5	9
Assessment				
Group productivity	5	7	7	19
Outcome of group tasks (e.g. oral or written report of group product)	5	7	7	19
Obtained knowledge of individuals	3	3	1	7
Collaborative performance				
Individual contribution to group effort (e.g. sharing ideas and doing assigned tasks)	3	2	2	7

Table 4. Antecedents of obstacles as reported by students in three waves of data collection.

Antecedents	Students (<i>n</i> = 23)			
	Wave 1	Wave 2	Wave 3	Total
Goals				
Solely focusing on individual academic learning	4	9	7	20
Acquiring course-related knowledge	4	9	7	20
Completing the assigned tasks	4	9	7	20
Emphasising collaborative goals (e.g. students should be able to strengthen social interaction and develop collaborative skills)	0	2	1	3
Teacher instruction				
Not instructing skills to collaborate	2	5	6	13
Instructing some skills to collaborate	2	6	2	10
Collaborative skills	1	2	0	3
Assigning roles for group members	1	0	0	1
Accepting different viewpoints	0	1	0	1
Listening to others	0	1	0	1
Cognitive skills	2	4	2	8
Analysing problems	0	4	1	5
Searching for information	2	1	1	4
Making a presentation	1	0	0	1
Assessment				
Group productivity	4	11	8	23
Outcome of group tasks (e.g. oral or written report of group product)	4	11	8	23
Obtained knowledge of individuals	2	0	0	2
Collaborative performance				
Individual contribution to group effort (e.g. sharing ideas and doing assigned tasks)	3	6	6	15

prioritise the aim of improving knowledge. To achieve this, I instruct students to adjust their working skills' (T2). Second, all teachers reported that they could not set the objectives for students to obtain particular collaborative skills because they could not concretely assess

the ways individuals worked together in groups. For example, one teacher said, 'It's easy to see students' learning outcomes through individual tests. However, it's hard to measure accurately how they improve collaborative skills' (T7). Third, students were overloaded with academic subjects and their level of collaborative skills was rather low. In this context, teachers could not formally set the collaborative goals of CL; instead, they tried to establish an inspiring CL environment whereby students feel excited to learn together.

Not talking about the collaborative goals of CL may affect student collaboration negatively. In fact, almost all students (20 out of 23) concurred they were not clear about the goals of CL when they started to work in groups. They focused their attention predominantly on academic learning goals. They reported not concentrating on practising collaborative skills. An illustrative response was, 'Because teachers didn't require us to practise collaborative skills, we just did our best to fulfil group tasks. Helping group members to study is good, but I couldn't do it much since I had many tasks to complete' (S2). In contrast to the majority, three students emphasised the importance of social interaction from the beginning: 'It's good to improve knowledge, but more important, I set my goals of building good relationships with others and improving my social skills. Only if we understand and behave well with one another, can we work together more successfully' (S13). In spite of knowing this, these students still hesitated to share these goals with their peers since they thought developing collaborative skills was not emphasised and evaluated in class.

In brief, most students underestimated collaborative goals with regard to developing social and collaborative skills. This may stem from the fact that teachers did not explicate the CL goals, especially the social or collaborative goals that are inherently part of CL. Therefore, these CL goals were overshadowed by academic goals of the course.

Instruction

No teacher reported instructing students formally and explicitly in the collaborative skills necessary for effective collaboration and this seemed a second antecedent of obstacles to the process of CL. Eleven out of 19 teachers postponed talking about essential things to do in groups until they noticed their students did not perform collaborative activities effectively. A typical comment was, 'I didn't formally teach students group work skills before their collaboration. Instead, I told them about dos and don'ts such as dividing individual tasks fairly, sharing ideas modestly and not offending others' (T7). Fourteen out of 19 teachers focused on instructing students in the cognitive skills to complete group tasks. For instance, one teacher said, 'When students did group projects, I taught them how to analyse problems, search for information, and make a good oral report'. (T11)

Students' reports of teacher instruction also demonstrated that teachers paid little attention to instructing collaborative skills. For example, 13 out of 23 students said that, when they started group work, they had not been prepared with essential skills to perform group activities appropriately. Others (10 out of 23) reported that their teachers instructed them in some cognitive and collaborative skills while they were performing group activities. However, only three out of 10 students mentioned that they had been trained for the collaborative skills such as assigning roles for individuals, listening attentively, and accepting different viewpoints.

Teachers also explained why they did not thoroughly train students in collaborative skills. First, because the amount of knowledge in some courses was heavy and the course syllabus did not require teachers to prepare students with CL skills, they skipped instructing

collaborative skills. Second, teachers' limited knowledge of and experience in collaborative skills training also contributed to this problem.

Because students received limited preparation for effective collaboration, they felt frustrated with collaborative activities in the first or second year of their study programme. In later years, most of them (15 out of 23) recognised some important rules for better group functioning such as punctuality, responsibility, work commitment, group planning, and time management. They regretted not knowing how to collaborate earlier so that they would not have wasted a lot of time in dysfunctional groups.

Assessment

While all of the participating teachers mainly focused on assessing group productivity (e.g. outcome of group tasks and obtained knowledge of individuals), some teachers (seven out of 19) assessed the collaborative process (i.e. the ways students perform group activities). This fact was confirmed by students' responses. All students said that teachers mostly concentrated on the assessment of group productivity. This indicates that teachers paid much more attention to rating individual academic learning and task performance than to collaborative performance. This type of assessment clearly does not encourage students to participate in collaborative activities. Teachers and students' opinions about assessment were, for instance, 'We don't have detailed criteria to assess how students work in groups. So, students may be not so motivated to collaborate' (T7); 'We often got a maximum grade for doing group tasks despite differences in individual contributions. Some students didn't actually work' (S7).

For those teachers that assessed the collaborative process, they all concurred that they faced challenges in assessing the collaboration. First, they were unable to observe how students collaborated, for example: 'I assessed group learning mainly based on their final product. Through group report or diary, I checked whether a member participated actively in that group. It's hard to assess accurately how they collaborated' (T11). Second, although they used self- and peer-assessment to assess the collaborative performance, they did not always trust the validity of student ratings: 'Students often worked in their favourite groups where they knew each other well. Their grading was high and their comments were positive. These results need to be considered carefully' (T4). This doubtful trustworthiness of peer- and self-assessment was confirmed by all 15 students who had experienced self- and peer-assessment. They said that they tended to assess their friends leniently and to rate highly: 'I don't think peer-assessment is effective. We gave the highest rate of participation for all members' (S1). Third, these teachers reported that their challenges in assessing the collaborative process may also stem from large classes (normally around 40 to 60 students per class), class time constraints and lack of assessment criteria: 'Some of my classes have more than 50 students. So I can't manage effectively their group activities. A maximum of 20–25 students is perfect' (T3); 'Now we can't really assess how students do group activities because there are no officially valid scoring rubrics for teachers' (T12).

Conclusion and discussion

This study investigated obstacles and antecedents to the effectiveness of CL from both teachers' and students' point of view in order to better understand the process of CL. We found four main obstacles to the effectiveness of CL, namely students' lack of collaborative

skills, free-riding, competence status, and friendship. The first obstacle confirms findings of prior research showing that the lack of interpersonal and teamwork skills may not only impede group interaction but may also stifle individual and collaborative learning (Shimazoe & Aldrich, 2010; Webb, Nemer, & Zuniga, 2002). When students are unskilled in collaboration, they are unable to contribute fully to the assigned tasks. This may lead to the second obstacle, free-riding, which has been extensively discussed in CL literature (e.g. Freeman & Greenacre, 2010; Popov et al., 2012). The third obstacle, competence status, confirms the finding by Bunderson and Reagans (2011) showing that competence status suppresses collective learning in such a way that low-status students are inhibited in participating actively and are often underestimated, whereas high-status peers have more chances to contribute and tend to ignore the efforts of low-status members. Finally, friendship groups may not always function effectively because friends tend to socialise more than to focus on group tasks (Janssen, Erkens, Kirschner, & Kanselaar, 2009; Shah & Jehn, 1993). Furthermore, one may forget their individual responsibility without being criticised by other group members. This is clearly visible for Vietnamese and other Asian Confucian heritage cultural countries since they want to avoid criticism and disagreement to strive for group harmony (Nguyen, Terlouw, & Pilot, 2005; Pearson, 1991). This implies that individuals, especially in Asian countries, may have to suppress their personal feelings or alternative viewpoints so as not to affect interactions within a group negatively. This cultural feature may also explain the tendency to rate peers very high in the peer evaluation observed in our study.

We have identified three interrelated antecedents that help explain the identified obstacles. Central to the antecedents is the strong focus of the teachers on the cognitive aspects of CL, which led the participating teachers to neglect the collaborative aspects of CL. These antecedents were demonstrated in the ways teachers set CL goals, provided instruction for collaborative skills, and assessed student collaboration. These findings of our study seem to be consistent with pleas for teacher competencies aimed at fostering the quality of student collaboration such as defining learning goals, instructing beneficial student behaviours, monitoring, supporting, consolidating and evaluating student interaction (Kaendler et al., 2014). A lack of teacher competencies for implementing CL may seriously and negatively impact student learning in groups because students may aim only to achieve individual academic learning and neglect the importance of social interaction during collaboration.

Our findings seem to imply that there are reciprocal interactions between these three antecedents. The low attention for collaborative goals of CL may cause teachers to ignore training students in collaborative skills and then teachers might not want to or be unable to assess the collaborative process because of a lack of training. Previous research supports this view. For example, students were rarely trained in social interactions for productive collaboration (e.g. Galton, Hargreaves, & Pell, 2009; Kutnick et al., 2005). Students' lack of social skills training may explain why teachers organised various group activities, but students mostly worked individually (Blatchford et al., 2003). Furthermore, teachers' lack of collaborative objectives and credible instruments to assess collaborative skills seem to contribute to undesired learning outcomes of collaboration (Koutrouba, Kariotaki, & Christopoulos, 2012; Roseth et al., 2008). In agreement with these research results, the findings of this study showed that the reciprocal interactions between three antecedents might negatively affect student perceptions of CL and their actual collaboration. We now present some examples to illustrate the relationships between these antecedents and the obstacles.

Regarding the association between the first antecedent (goals) and the obstacles, teachers may encounter major obstacles such as free-riding when teachers and students exclusively focus on the goal of individual academic learning while neglecting collaborative goals. When the group goal was to accomplish group tasks and to get a high grade for the group product, less capable students were often underestimated during CL. Feeling undervalued may cause them to withhold their responsibility for and effort in doing group work. Our study also demonstrated an association between the second antecedent (instruction) and the obstacles, for example, students' lack of collaborative skills and friendship. When teachers did not focus on instructing collaborative skills, students found it difficult to engage in collaborative work. Therefore, unskilled group members were unable to perform collaborative tasks effectively, such as not being able to argue constructively as well as critically. The third antecedent (assessment) can be linked with the obstacles, for example, competence status. When teachers primarily concentrate on group productivity without simultaneously assessing the collaborative performance, group members may not be urged to strengthen social interaction and mutual help in order for everyone to benefit from collaboration. As a consequence, low-status students may feel unconfident to participate in collaborative work, thereby not benefiting from the collaboration. These links between antecedents and obstacles emphasise the need to examine whether and how the manipulation of these antecedents as well as obstacles can have an effect on student collaboration.

The results of the present study seem to call for special attention by educators to balance the cognitive and collaborative aspects of CL. Integration of these aspects may help to ensure the social interaction, which is salient to the efficacy of CL (Kreijns et al., 2003). In support of this argument, Barron (2003) stated that 'to understand the nature of productive collaboration, we need to articulate how social goals and discourse practices interact with knowledge-building processes that lead to co-construction of understanding' (p. 309).

The present study is limited in that it is based solely on participants' reports during semi-structured interviews. The purpose of this study, however, was to deeply understand the obstacles that teachers and students experienced during CL. By interviewing voluntary and experienced participants, we think we have collected valuable data, but generalisations should be made with caution. It should also be noted that the range of participants was limited to those with experience of CL. On the one hand, this might have favoured the results of this study towards positive experiences of CL. On the other hand, by recruiting participants who had experience of CL, we think we may have been able to capture a more nuanced and detailed view of the positive sides as well as the drawbacks of CL. Clearly, observational research over a long period of CL application is needed to validate the proposed relationships between antecedents and obstacles. In addition, future research with a large variety of participants' subject areas should also investigate whether their disciplines would make a difference in the attitudes of teachers and students towards CL practice. Finally, some cultural factors inherent to the Asian context, such as striving for group harmony and avoiding criticism, might have influenced some of the results thus indicating caution when thinking about these factors in other contexts.

If the findings of this study are confirmed in other studies, these will have practical implications for implementing CL as well as training teachers in CL design and practice. As for CL teaching practice, it seems necessary that teachers emphasise the dual purposes of CL (i.e. the cognitive and collaborative aspects), adequately train students in collaborative skills prior to collaboration, and equally evaluate the productivity and learning process of

individuals and the whole group. Additionally, it seems important that teachers take into account common obstacles that may affect the process of CL. For teacher education (be it pre-service or in-service), teacher educators could use the student teachers' experience with CL to help them understand better the problems that they and their (future) students may encounter and how they themselves can improve the student collaboration. Teacher educators then should focus on drawing student teachers' attention to the antecedents of the obstacles to the collaborative process. Furthermore, teacher education and training could help to equip student teachers with strategies to set clear cognitive and collaborative goals for CL or to understand how to support collaborative skills development of their (future) students. When future efforts in teacher training and education are aimed at enhancing prospective and active teachers' understanding of the common obstacles to effective CL and the antecedents that contribute to these obstacles, both teachers' and students' experiences during CL may improve significantly.

Acknowledgements

The authors would like to thank the teachers and students involved for their voluntary participation in the interviews.

Funding

This research was supported by a grant from the Vietnam International Education Development project (VIED-322).

References

- Abrami, P. C., Poulsen, C., & Chambers, B. (2004). Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. *Educational Psychology, 24*, 201–216.
- Baker, T., & Clark, J. (2010). Cooperative learning – a double-edged sword: A cooperative learning model for use with diverse student groups. *Intercultural Education, 21*, 257–268.
- Barron, B. (2003). When smart groups fail. *Journal of the Learning Sciences, 12*, 307–359.
- Blatchford, P., Kutnick, P., Baines, E., & Galton, M. (2003). Toward a social pedagogy of classroom group work. *International Journal of Educational Research, 39*, 153–172.
- Boeije, H. (2010). *Analysis in qualitative research*. London: Sage.
- Bunderson, J. S., & Reagans, R. E. (2011). Power, status, and learning in organizations. *Organization Science, 22*, 1182–1194.
- Chiriac, E. H., & Granström, K. (2012). Teachers' leadership and students' experience of group work. *Teachers and Teaching, 18*, 345–363.
- Dommeyer, C. J. (2007). Using the diary method to deal with social loafers on the group project: Its effects on peer evaluations, group behavior, and attitudes. *Journal of Marketing Education, 29*, 175–188.
- Freeman, L., & Greenacre, L. (2010). An examination of socially destructive behaviors in group work. *Journal of Marketing Education, 33*, 5–17.
- Frykedal, K. F., & Chiriac, E. H. (2011). Assessment of students' learning when working in groups. *Educational Research, 53*, 331–345.
- Galton, M., Hargreaves, L., & Pell, T. (2009). Group work and whole-class teaching with 11- to 14-year-olds compared. *Cambridge Journal of Education, 39*, 119–140.
- Gillies, R. (2006). Teachers' and students' verbal behaviours during cooperative and small-group learning. *British Journal of Educational Psychology, 76*, 271–287.

- Gillies, R., & Boyle, M. (2010). Teachers' reflections on cooperative learning: Issues of implementation. *Teaching and Teacher Education*, 26, 933–940.
- Glaser, B., & Strauss, A. (2012). *The discovery of grounded theory: Strategies for qualitative research*. New Brunswick, NJ: AldineTransaction.
- Hämäläinen, R., & Vähäsantanen, K. (2011). Theoretical and pedagogical perspectives on orchestrating creativity and collaborative learning. *Educational Research Review*, 6, 169–184.
- Janssen, J., Erkens, G., Kanselaar, G., & Jaspers, J. (2007). Visualization of participation: Does it contribute to successful computer-supported collaborative learning? *Computers & Education*, 49, 1037–1065.
- Janssen, J., Erkens, G., Kirschner, P. A., & Kanselaar, G. (2009). Influence of group member familiarity on online collaborative learning. *Computers in Human Behavior*, 25, 161–170.
- Johnson, D. W., & Johnson, R. T. (1999). Making cooperative learning work. *Theory Into Practice*, 38, 67–73.
- Johnson, D. W., Johnson, R. T., & Smith, K. (2007). The state of cooperative learning in postsecondary and professional settings. *Educational Psychology Review*, 19, 15–29.
- Kaendler, C., Wiedmann, M., Rummel, N., Spada, H., Rev, E. P., Kaendler, C., ... Rummel, N. (2014). Teacher competencies for the implementation of collaborative learning in the classroom: A framework and research review. *Educational Psychology Review*, 27, 505–536.
- Koh, C., Tan, O. S., Wang, C. K. J., Ee, J., & Liu, W. C. (2007). Perceptions of low ability students on group project work and cooperative learning. *Asia Pacific Education Review*, 8, 89–99.
- Koutrouba, K., Kariotaki, M., & Christopoulos, I. (2012). Secondary education students' preferences regarding their participation in group work: The case of Greece. *Improving Schools*, 15, 245–259.
- Kreijns, K., Kirschner, P. A., & Jochems, W. (2003). Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: A review of the research. *Computers in Human Behavior*, 19, 335–353.
- Kutnick, P., Sebba, J., Blatchford, P., Galton, M., Thorp, J., MacIntyre, H., & Berdondini, L. (2005). *The effects of pupil grouping: Literature review* (Research Report 688). Nottingham: DfES Publications.
- Li, M., & Campbell, J. (2008). Asian students' perceptions of group work and group assignments in a New Zealand tertiary institution. *Intercultural Education*, 19, 203–216.
- Lopata, C., Miller, K. A., & Miller, R. H. (2003). Survey of actual and preferred use of cooperative learning among exemplar teachers. *The Journal of Educational Research*, 96, 232–239.
- Nguyen, M. P. (2008). Culture and cooperation: Cooperative learning in Asian Confucian heritage cultures – The case of Viet Nam. Doctoral dissertation, Utrecht University, The Netherlands.
- Nguyen, M. P., Terlouw, C., & Pilot, A. (2005). Cooperative learning vs Confucian heritage culture's collectivism: Confrontation to reveal some cultural conflicts and mismatch. *Asia Europe Journal*, 3, 403–419.
- Nguyen, M. P., Terlouw, C., & Pilot, A. (2012). Cooperative learning in Vietnam and the west-east educational transfer. *Asia Pacific Journal of Education*, 32, 137–152.
- Pauli, R., Mohiyeddini, C., Bray, D., Michie, F., & Street, B. (2008). Individual differences in negative group work experiences in collaborative student learning. *Educational Psychology*, 28, 47–58.
- Pearson, V. (1991). Western theory, eastern practice. *Social Work With Groups*, 14, 45–58.
- Pham, T. H. T. (2010). Designing a culturally-relevant pedagogy for Confucian heritage culture (CHC) college students: The case of cooperative learning in Vietnam. Unpublished doctoral dissertation, University of Queensland, Australia.
- Popov, V., Brinkman, D., Biemans, H. J. A., Mulder, M., Kuznetsov, A., & Noroozi, O. (2012). Multicultural student group work in higher education. *International Journal of Intercultural Relations*, 36, 302–317.
- Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Promoting early adolescents' achievement and peer relationships: the effects of cooperative, competitive, and individualistic goal structures. *Psychological Bulletin*, 134, 223–246.
- Ross, J. A. (2008). *Explanation giving and receiving in cooperative learning groups*. (R. Gillies, A. Ashman, & J. Terwel, Eds.). New York, NY: Springer.
- Ruys, L., Van Keer, H., & Aelterman, A. (2012). Examining pre-service teacher competence in lesson planning pertaining to collaborative learning. *Journal of Curriculum Studies*, 44, 349–379.

- Shah, P. P., & Jehn, K. A. (1993). Do friends perform better than acquaintances? The interaction of friendship, conflict, and task. *Group Decision and Negotiation*, 2, 149–165.
- Shimazoe, J., & Aldrich, H. (2010). Group work can be gratifying: Understanding & overcoming resistance to cooperative learning. *College Teaching*, 58, 52–57.
- Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary Educational Psychology*, 21, 43–69.
- Strijbos, J. W. (2011). Assessment of (computer-supported) collaborative learning. *IEEE Transactions on Learning Technologies*, 4, 59–73.
- Strom, P. S., & Strom, R. D. (2011). Teamwork skills assessment for cooperative learning. *Educational Research and Evaluation: An International Journal on Theory and Practice*, 17, 233–251.
- Van De Pol, J., Volman, M., & Beishuizen, J. (2011). Patterns of contingent teaching in teacher-student interaction. *Learning and Instruction*, 21, 46–57.
- Van Leeuwen, A., Janssen, J., Erkens, G., & Brekelmans, M. (2013). Teacher interventions in a synchronous, co-located CSCL setting: Analyzing focus, means, and temporality. *Computers in Human Behavior*, 29, 1377–1386.
- Webb, N. M. (2009). The teacher's role in promoting collaborative dialogue in the classroom. *British Journal of Educational Psychology*, 79, 1–28.
- Webb, N. M., Nemer, K. M., & Zuniga, S. (2002). Short circuits or superconductors? Effects of group composition on high-achieving students' science assessment performance. *American Educational Research Journal*, 39, 943–989.

Appendix. Interview questions for teachers and students

Interview questions for teachers

I. Introduction

Let me begin by asking you some questions about your personal information (e.g., age, years of teaching experience, specialised teaching subject, participation in collaborative learning training courses)

II. Questions

1. General viewpoint of student learning through collaboration in small groups
 - 1.1. What do you understand about student learning through collaboration in small groups?
 - 1.2. In your view, what is an effective learning group?
 - 1.3. What are goals that students might achieve from working together in groups? (*Note: the interviewer tries to explore what goals are specific for collaborative learning?*)
2. Implementation of collaborative activities
 - 2.1. Reasons for using collaborative activities
 - 2.1.1. Why do you use collaborative activities?
 - 2.2. Collaborative task construction
 - 2.2.1. What are elements that you often take into consideration as designing collaborative tasks? Can you describe a collaborative task as an example?
 - 2.2.2. What goals do you include in a collaborative task? Please give an example.
 - 2.2.3. What were difficulties you experienced as preparing collaborative tasks?
 - 2.2.4. How did you deal with the difficulties?
 - 2.3. Group composition
 - 2.3.1. In what ways do you group students?
 - 2.3.2. Can you share your experience about what kind of grouping worked well? What didn't work well? Why (not)?
 - 2.3.3. What were difficulties you experienced as grouping students?
 - 2.3.4. How did you deal with the difficulties?
 - 2.4. Teacher's roles while groups are working
 - 2.4.1. What do you do to ensure the contribution of each group member to accomplish a group task?

- 2.4.2. What do you think about skills needed for students to work successfully in a group?
- 2.4.3. What do you do to help students improve these skills?
- 2.4.4. What were difficulties you experienced as promoting these skills?
- 2.4.5. How did you deal with the difficulties?
- 2.4.6. Is there something else that students need in order to not only work but also learn successfully in a group?
- 2.5. Assessment of student learning through collaboration in groups
 - Teacher's assessment
 - 2.5.1. How do you assess the collaborative work of a group?
 - 2.5.2. What do students learn from collaboration?
 - Note: the interviewer tries to explore what outcomes are specific for collaborative learning?*
 - 2.5.3. What were difficulties you experienced as assessing student learning?
 - 2.5.4. How did you deal with the difficulties?
 - Group's assessment
 - 2.5.5. How does each group assess their collaborative work?
 - 2.5.6. What do you do to encourage group assessment?
 - 2.5.7. What were difficulties you experienced as encouraging group assessment?
 - 2.5.8. How did you deal with the difficulties?
- 3. Reflection on the implementation of collaborative activities
 - 3.1. What have you learned from your experience of using collaborative activities?
 - 3.2. What do you expect from your faculty to promote teacher's implementation of collaborative activities?
 - 3.3. Are there other issues you would like to share about your teaching experience?

III. Conclusion

Thank you very much for sharing your ideas!

Do you have any questions or remarks?

Interview questions for students

I. Introduction

Let me begin by asking you some questions about your personal information (e.g., age, academic program)

II. Questions

- 1. General viewpoint of student learning through collaboration in small groups
 - 1.1. What do you understand about student collaboration in small groups?
 - 1.2. In your view, what is an effective learning group?
 - 1.3. What are your personal goals as learning collaboratively in groups? (*Note: the interviewer tries to explore what goals are specific for collaborative learning?*)
- 2. Participation in groups
 - 2.1. Collaborative tasks
 - 2.1.1. What are elements of a collaborative task? Can you describe a collaborative task as an example?
 - 2.1.2. What are goals included in a collaborative task?
 - 2.2. Group composition
 - 2.2.1. Who do you like to work with? Why?
 - 2.2.2. How do your teachers assign groups? Do you prefer teachers to assign groups or you yourself choose group mates? Why?
 - 2.2.3. What kind of grouping worked well for you? What didn't work well? Why (not)?
 - 2.2.4. What were difficulties you experienced as choosing group mates?
 - 2.2.5. How did you deal with the difficulties?

2.3. While your group is working

2.3.1. What is your group goal? Please give an example.

2.3.2. What were difficulties your group experienced as working to accomplish this goal?

2.3.3. How does your group divide individual task for each group member?

2.3.4. What do you think about skills in order to work successfully in your group?

2.3.5. Is there something else that you need in order to not only work but also learn successfully?

Transition: Now I'd like to ask about helping among group members in doing a collaborative task

2.3.6. What circumstances do you give help to your group mates? Can you describe the way you give help?

2.3.7. What were difficulties you experienced as giving help to your group mates?

2.3.8. How did you deal with the difficulties? How did you feel?

2.3.9. What circumstances do you seek help from your group mates? Can you describe the way you ask for help?

2.3.10. What were difficulties you experienced as asking for help from your group mates?

2.3.11. How did you deal with the difficulties? How did you feel?

2.3.12. What did your teachers do to encourage students to help each other?

2.4. Assessment of student collaboration in small groups

Teacher's assessment

2.4.1. What do you think about teacher's assessment of group work?

Group's assessment

2.4.2. How does your group assess the collaborative work?

3. Reflection on the experience of joining collaborative activities

3.1. What do you gain after learning together in groups? What do you fail to gain?

3.2. Does your learning experience help you in your future teaching career? How can this help?

3.3. Are there other issues you would like to share about your learning experience?

III. Conclusion

Thank you very much for sharing your ideas!

Do you have any questions or remarks?