Students' goal preferences, ethnocultural background and the quality of cooperative learning in secondary vocational education
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Chapter 3

EXPLORING THE LINKS BETWEEN STUDENTS' ENGAGEMENT IN COOPERATIVE LEARNING, THEIR GOAL PREFERENCES AND PERCEPTIONS OF CONTEXTUAL FACTORS IN THE CLASSROOM

[2]

Abstract

In this in-depth study we questioned effective and ineffective cooperative learning (CL) teams about their goal preferences, the quality of CL, and perceptions of contextual factors in the classroom in a stimulated-recall setting. Mastery and social responsibility goals – together with 'learning for a certificate' goal- tended to be more prevalent in effective teams, while learning for a certificate and entertainment goals were dominant in ineffective teams. Students' belongingness goals were negatively related to socially oriented task engagement in ineffective teams. Task characteristics, group composition, and teacher behavior were mentioned as reasons for effective or ineffective CL.

Key words: goal preferences, engagement, contextual factors, cooperative learning

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INTRODUCTION

In a study on the quality of cooperative learning in senior vocational high schools in the Netherlands one of the students commented during an interview: *"It is just dead boring at school, I don't think I actually learn anything at all, I hope I will at least learn something in my traineeship"*. This statement indicates a mismatch between students' goal preferences and the goals that are set by the school, which may result in low levels of student engagement and, eventually, in a state of disengagement for large groups. This comment points at a common problem in senior vocational high schools where the drop out rate is alarmingly high. About 37 percent of the first year students quit school (School Inspectorate, 2002). Many of these dropouts reported that they had experienced their study as uninteresting, too theoretical, too difficult and non-supportive for their future career (Voncken, Van der Kuip, Moerkamp, & Felix, 2000). Dropping out of school often is an outcome of underlying motivational problems that students experienced during their school history. In the present in-depth study we will focus on students' engagement levels in cooperative learning (CL) settings in secondary vocational education. CL is a common instructional method in senior vocational high schools in the Netherlands. Of the first–year students in secondary vocational schools, one third work less than 45 minutes per week on CL, and one third between 45 to 90 minutes per week, whereas the other one third work between 45 and 90 minutes per day in CL teams (Hijzen, Boekaerts & Vedder, submitted). Often CL methods involve hands-on tasks, in which students can develop their professional skills together. In CL settings students depend on each other for learning and the conditions may encourage them to attend school regularly. CL methods are also believed to foster a mastery goal orientation which is related to positive educational outcomes (Midgley & Urdan, 1992). Unfortunately, placing students in CL groups does not automatically create favorable conditions for learning. Many students do not actually work together when asked to collaborate. They are engaged in task-irrelevant behavior instead. In this study we will approach this problem from the perspective of motivational self-regulation.

Three types of engagement

Motivation strategies are a crucial aspect of students' self-regulation in academic and non-academic activities. We define motivation strategies as processes that are governed by goal

preferences. Elliot and Sheldon (1998) view goal preferences as the "personally meaningful objectives that individuals pursue in their daily lives". We would like to add that these goal preferences steer and direct, or in other words self regulate student behavior in the classroom. Self-regulation refers to a multi-level, multi component process where students target their cognitions, feelings and actions in the service of their goals (Boekaerts & Corno, 2005). Students are expected to regulate their own learning behavior appropriately, showing higher levels of engagement when their goal preferences are in line with the goals they are expected to achieve in school. Engagement refers to the intensity and quality of students' involvement in initiating and carrying out learning activities (Wellborn, 1991). Ryan (2000) made a distinction between motivation and engagement; the former concerns cognitions underlying involvement in one's schoolwork (e.g., motivational beliefs) and the latter refers to students' actual involvement in their schoolwork (concrete actions, engagement). Hence, engagement can be perceived as an indicator of students' motivation.

In this study we will focus on students' actual involvement or engagement in CL. Following Chapman (2003) we distinguished between three types of engagement that may occur during CL, namely *task-relevant engagement*, *task-irrelevant engagement* and *socially oriented task engagement*. The behavior of students who are actively engaged in the task is characterized as *task-relevant* behavior. These students are active, focus on the task and persist when obstacles occur. The behavior of disaffected students is characterized as *task-irrelevant* behavior. These students do not try hard, give up easily in the face of challenges and engage in task-irrelevant behavior like chatting or disturbing others (Chapman, 2003). *Socially oriented task engagement* is related to the first type of engagement. Students who are socially engaged are primarily involved in social activities such as providing help and emotional support.

In this study we will attempt to distinguish CL teams that predominantly show (social) task-relevant engagement during CL (i.e. effective CL teams), from teams that show task-irrelevant engagement most of the time (ineffective CL teams), in terms of their goal preferences and their perceptions of contextual factors in the classroom.

Previous studies

In a previous study (Hijzen, Boekaerts, & Vedder, 2006), we focused solely on students' general cognitions underlying their perception of the quality of CL. Generally weak relationships were found between students' goal preferences and the quality of CL. Several

reasons were given for this relatively weak link. First, students might not be aware of their goal preferences and therefore do not consider them when reflecting on the quality of CL. It is also plausible that students' general goals, as measured with the goal questionnaire, differ from goal preferences in a context (see for example Lemos, 1996). It was found that students' scores on the quality of CL were most strongly associated with their social support goals (e.g., *"I want to support my peers"*), followed by belongingness goals (e.g., *I want to get along with my peers*) and mastery goals (e.g., "*I want to learn new things*"). No relationship was found with students' superiority or individuality goals (e.g., *"I want to be the best student of my cla*ss").

In this study we explored students' goal preferences and their perception of the quality of CL using stimulated-recall. The quality of CL was analyzed using a measure of engagement during CL. In order to discover which types of goals were most salient in the CL setting, we did not limit the range of goals to the traditional mastery and performance distinction (e.g., Ames & Archer, 1988; Dweck 1986; Urdan, 1999), or to the four goals, that were the object in our previous research. Instead, we explored the full range of goal preferences that students spontaneously mentioned in combination with the quality of CL. We reasoned that several goal preferences may underlie students' engagement in the classroom. With the exception of a few studies (e.g., Downson & McInerney, 2001; Lemos; 1996), students' subjective goal definitions have not been the object of research. In this in-depth study, we combine students' self-reports on a-priori goal preferences with the goals that they spontaneously mention while reflecting on their own activities in actual CL settings.

We reasoned that the relatively weak link between students' goal preferences and the quality of CL in our previous study is largely due to students' perceptions of contextual cues. We assume that the context plays an important role in shaping the quality of CL. Earlier research supports that environmental features trigger specific goal preferences, thus influencing the quality of CL (e.g., Ames, 1992; Ames & Archer, 1988, Blumenfeld, 1992; Hijzen, Boekaerts, & Vedder, 2006). We will pay close attention to students' perceptions of contextual factors in the classroom that may or may not promote goal preferences that might shape the conditions for effective CL. In the present study a multi-method, context-bound approach was used in order to capture students' thinking about the type of goal preferences and the type of context that stimulate their CL processes best.

By comparing participating CL teams that have reported to cooperate very well with teams that have reported to cooperate poorly, we will gain insight into the salient goal preferences of these reflective groups, and into the nature of the relationship between perceptions of the members of the teams of contextual factors and the reported quality of CL. Based on findings of previous studies we expect that in effective CL teams, students' social and mastery goals will be dominant. For example, McInerney, Hinkley, Dowson and Van Etten (1998) suggested that a joint mastery and social goal orientation is more productive than mastery goals alone because a sense of belongingness and social responsibility provoked by social goals provides an added drive for academic achievement. Indeed, the foundation for much of the success of CL is the well-known phenomenon that individuals show goal striving for the sake of the group (Hertz-Lazarowitz & Miller, 1992). Wentzel (1989) found that high-achieving students and low-achieving students displayed specific unique social goal patterns. High-achievers tended to focus on getting things done on time and being successful, responsible, and dependable students, whereas making friends and having fun were less valuable goals. Low-achieving students on the other hand reported that the latter two goals were important. In line with these results, we expect that students in effective CL teams combine salient mastery and social goals. We also expect that these team members are more conscious of their goal preferences than students in ineffective teams. Earlier research suggested that formulating mastery goals facilitates students' intrinsic motivation (e.g., Cantor, Norem, Niedenthal, Langston, & Brower, 1987; Sheldon & Kasser, 1995; Sheldon & Elliot, 1997) and at the same time boosts their socially oriented task engagement in CL.

Based on reviews of conditions for CL (e.g., Cohen, 1994; Webb & Palincsar, 1996), we expect that effective CL teams perceive contextual factors as promoting mastery and social goals as these are challenging, hands-on, and promoting interdependency (Webb & Palincsar, 1996). These teams are preferably not too big so that effects of social loafing are minimal and these team members get along and support each other (e.g., Chin, Salisbury, Pearson, & Stollak, 1999; Sharan & Sharan, 1992) in a beneficial way. Team members of effective teams are also expected to evaluate their teachers as specialists who are guiding the learning process sufficiently, but not in a too strict way. In other words, they view their teachers as coaches who make appropriate use of scaffolding methods (Brown & Palincsar,

1989; Oortwijn, Boekaerts, & Vedder, in preparation) and they evaluate the school climate as transparent and supporting.

Engagement, goal preferences and contextual factors in ineffective CL teams

In ineffective teams we expect that team members' social and affective goals are more important than their mastery goals. They are expected to target their cognitions, feelings and actions in the service of task-irrelevant engagement, such as chatting, making friends or just having fun. These students are expected to be preoccupied with their well-being and therefore less involved with the learning process. Furthermore, we expect these team members to be less involved in goal planning, and less conscious of their goals than effective team members. Because superiority goals (i.e. having a performance orientation) are likely to conflict with goals that are salient in CL settings, we expect that students who hold these goals to experience the CL setting as a threat to their wish to perform at a more individual level (e.g., Schwartz & Bardi, 2001). Lepper and Hodell (1989) found that students who try to get good grades, because they want to comply or to obtain a certificate are not intrinsically motivated and they may disengage from a task when they judge that they might not achieve this goal.

We expect that members of ineffective teams evaluate the group task as boring and too theoretical. They might experience difficulties in getting along and perceive teachers as controlling or not involved.

Research question

Students' perspectives on their goal preferences were taken as a starting point and their task-relevant, task irrelevant and socially oriented task engagement levels were observed during CL and further examined in a stimulated-recall setting. CL teams that function well will be compared with teams that function poorly or in fact are not cooperating at all. The main research question in this study is: "*How can we distinguish effective CL teams from ineffective CL teams, and characterize them in terms of students' goal preferences and perceptions of contextual factors in the classroom?*" We will investigate whether our findings lend support to models of CL that were presented on the basis of previous research and whether conceptualizations used in earlier studies adequately cover processes that bring about or substantiate effective CL.

METHOD

Subjects

Participants in this in-depth study were 57 second year-students from five different schools for secondary vocational education in the Netherlands. Secondary vocational school starts for most students at the age of 16 after they completed a junior vocational school. Senior vocational school is divided into four levels. At the first level students train to become assistants (6 to 12 months). At the second level they have two to three year courses for basic vocational training. At the third level students are enrolled in professional training and at the fourth level they participate in middle-management training (3 to 4 years) or in a specialized training course (1 to 2 years). Most students finishing secondary vocational school prefer to enter the labor market and do not proceed with further studies (for further information on secondary vocational education in the Netherlands, see Euridice database on education, 2003 website). Secondary vocational schools offer a broad range of program types. Subjects in the present study were enrolled in three different program types; *ICT*, *health and welfare* and *retail and administration* programs, these were level 3 and level 4 studies. Five teachers, who often used CL instruction methods, and their classes were willing to participate. In the five classes 18 CL teams participated. From these 18 teams we selected four teams (nine males; eight females in total) that reported to cooperate very well and four teams (five males; nine females in total) that said to cooperate very badly or that did not cooperate at all. Two of the teams that said to cooperate very well were enrolled in retail and administration, one in ICT, and one in health and welfare programs. In the teams that were unsatisfied with their CL one team was enrolled in retail and administration, two in ICT and one in health and welfare programs. The eight teams were spread over four different classrooms.

Group composition

The CL settings differed from class to class. In the ICT class we selected three teams of students that worked on a (computer) project for an eight week period in teams that consisted of four individuals. Students were expected to work on the project for three days a week. Teachers were present to assist when help was required. All courses that students attended during the rest of the week were related to the project.

Two CL teams of health and welfare students were selected and were observed during social science classes. The teams consisted of six persons. Students in these classes worked on a variety of group assignments. For example, students were asked to prepare a role play or to cooperatively work out a treatment plan for an imaginary person with a certain type of behavioral problem. For the assignments the students had to work together.

Two retail and administration classes participated. In the former class (two teams were selected) modes of direct instruction were combined with group work. This was the only classroom where direct teaching was dominant. In the latter (one team was selected) we observed students during a simulation project. A team of six students had to organize their own virtual company and their aim was to make it profitable. The project lasted for almost one school year. Each student had a specific role in the company, with the attached responsibility (e.g., director, secretary, assistant). Different aspects of what they were taught during class were integrated in the project, e.g., working out a business plan. We observed during the weekly meetings when these six students had to evaluate, plan and divide tasks.

Procedure and instrumentation

In each classroom, we made three video-registrations of the CL teams, with two weeks intervals. The first video-recording started at the beginning of the (CL) projects and each recording took 10 minutes. The students also participated in a self-report study and completed questionnaires on their goal preferences and the Quality of Cooperative Learning. After the last video-registration we confronted students with a video-recording of their CL team and interviewed them about their goal preferences, the quality of CL, influences on their engagement levels and goal conflicts.

Questionnaires

Before students were observed and interviewed they participated in a survey. They completed the Goal Importance and Facilitation Inventory (GIFI) which is based on Fords' taxonomy of broad goals (Ford, 1992; Ford & Nichols, 1991). Students indicate how salient each of the seven broad goal domains are in their current life, namely students' mastery, affective, belongingness, social support, self-determination, material gain, and superiority/ individuality goals. Response categories ranged from "I disagree very strongly" (1) to "I agree very strongly" (5).

Observational studies

In order to rate engagement levels of the individual students in CL, we developed an 18-item rating list. Items were based on a study by Skinner and Belmont (1993) and the Quality of CL questionnaire (Hijzen, Boekaerts, & Vedder, 2006). The rating list contained three subscales. Items in the first subscale measured students' *task-irrelevant engagement*. A sample item is "this student chats", Cronbach's alpha was .89. A second subscale measured students' *task-relevant engagement*. A sample item is "this student concentrates on the task", Cronbach's alpha was .95. The third subscale aims to measure students' *socially oriented task engagement*. A sample item is "this student offers team members help", Cronbachs' alpha was .90. Response categories (4) of the items varied from "almost never" to "very often".

In order to optimize interrater reliability, a scoring guide was developed before the actual rating process started. Examples were listed for each item in the rating list and two raters were trained to identify them. They rated the engagement levels of the 57 students, on one video-tape using the rating list. This video-recording was the same as the one used in the stimulated recall session. Cohens' Kappa indicated an acceptable level of agreement between the two raters, $K = .66$, $p < .01$.

Interviews/ stimulated-recall

Semi-structured group interviews were conducted with the observed teams of students. The videotape formed the basis for the interviews which contained 16 questions. We asked students about their goal preferences, their perceptions of contextual factors in the classroom and the quality of the cooperation in their team. Teams were asked to explain motives for task-relevant and task-irrelevant behavior during CL. On average an interview took 45 minutes. The interviews were taped and transcribed and the interview protocols were restructured by subdividing the statements into broad categories. We distinguished two categories of statements, namely those about students' goal preferences and those about students' perceptions of contextual factors in the classroom. Interview protocols were analyzed, using an inductive content analysis approach, based on the work of Lemos (1996) and Dowson and McInerney (2001). Appendix A presents the scoring categories.

A scoring guide was developed with examples of each category and statements about goals were counted and categorized, by four raters. Interrater agreement was 83 % (($100/n$ statements) x n agreements). An agreement meant that at least three out of four raters agreed about the classification of a particular statement (see Lemos, 1996). Interrater agreement (two raters) for assigning statements about contextual characteristics (see Appendix A) was 94 % (($100/n$ statements) x n agreements).

Quantitative analysis

Quantitative analysis of the self-reports and observed scores for engagement consisted of calculating mean scores, univariate analyses of variance and correlation analyses. In line with Lemos (1996) quantitative analyses of the interview statements consisted of frequency analysis and analysis of the profiles' congruency (Serafini coefficient C). The congruence coefficient is a measure of the relative distance between two profiles. A profile considers several variables at the same time and C summarizes the different distances between the profiles. C values range from 0 to 1:

From 0.90 to 1.00: Perfect congruence

From 0.70 to 0.89: High congruity

From 0.40 to 0.69: Moderate congruity

From 0.20 to 0.39: Low congruity

From 0.00 to 0.19: No congruity

For more information on calculating congruence coefficients see Lemos (1996). Goal profiles were derived by calculating the percentage of students' statements on each goal. We counted the proportion of each particular goal type as compared to the total number of goal statements.

RESULTS

In this section, we will compare goal profiles and perceptions of contextual factors of teams that reported in the interviews that the quality of CL in their team was very good with teams that were highly unsatisfied with the quality of CL. An additional selection criterion was that the mean scores on task-relevant and socially oriented task engagement in the effective teams should be above 3, and in the ineffective teams below 3. By contrast, task-irrelevant

engagement should be higher in the ineffective teams as compared to the effective teams. Table 1 presents these teams engagement scores

Table 1: Effective teams' (N = 4, 17 persons) and ineffective teams' (N = 4, 14 persons) engagement scores.

CL Engagement (observation)	*Effective teams*		*Ineffective teams*	
Task-relevant engagement	3.46	.87	2.98	1.24
Task-irrelevant engagement	1.57	.86	1.92	1.01
Socially oriented task engagement	3.18	.88	2.02	.80

As predicted, observed engagement scores were dissimilar in the teams. In ineffective teams task-relevant and socially oriented task engagement tended to be lower and task-irrelevant engagement higher than in effective teams. Univariate analyses showed that the teams scored significantly different on socially oriented task engagement (F (1, 20) = 9.44, p = .006, η^2 = .32). We will conclude this section with two case studies in order to illustrate in more detail why some teams were successful in CL and others were not.

Goal preferences and engagement in CL

Table 2 presents effective and ineffective team members' goal preferences as obtained by their GIFI-self reports.

Table 2: Effective (N = 18) and ineffective teams members' GIFI goal preferences (N = 14).

Goal Preferences	*Effective teams*		*Ineffective teams*	
Affective goals	4.48	.72	4.30	.69
Social Support	4.42	.73	3.86	.73
Mastery	4.29	.60	3.91	.85
Self Determination	4.43	.53	4.25	.62
Belongingness	3.80	1.07	4.52	.74
Material Gain	4.05	.77	3.94	.66
Superiority	3.50	.96	3.16	.92

A closer look at these teams' goal preferences showed that effective teams' most prevalent goal preferences were affective, social support goals and self-determination goals, whereas ineffective team member's most prevalent goal preferences were belongingness, affective and self-determination goals. The most striking difference concerned students' belongingness and social support goals. Effective team members tended to report slightly lower scores on belongingness goals than ineffective team members, while the reversed pattern is observed for social support goals. However, no significant differences between goal preferences for effective and ineffective CL teams were found. In order to explore how the different goals are related to the three engagement types we calculated Pearson correlation coefficients for effective and ineffective teams for task-relevant, task-irrelevant and socially oriented task engagement, and the goal domains of the GIFI. We expected students' mastery and social goals to be related to task-relevant and socially oriented task engagement. Remarkably, only one goal domain was significantly related to students' engagement scores, namely students' belongingness goals. This relationship only concerned the ineffective teams. The direction, in ineffective teams, of the relationship was not in line with what we predicted. That is to say, preferences for belongingness goals were negatively related to their socially oriented task behavior ($r = -.75$, $p < .05$), implying that ineffective team members who report that belongingness goals are salient in their current life demonstrate less socially oriented task behavior than those report that these goals are not important in their life. Inspection of Table 2 reveals that in the group of ineffective teams, belongingness goals were dominant over mastery and social support goals, while this pattern is reversed in the effective teams. This finding suggests that wanting to feel at home in the group (belong) may hinder rather than facilitate socially oriented task engagement.

Goal profiles

After the categorization of students' statements on all goal preferences, it became apparent that the aforementioned goal preferences were not the only ones that were prevalent in the CL setting. A profile was elaborated for the two types of teams in order to account for the relative importance of each goal within the total set of goal preferences. We counted all the statements that referred to goal preferences per subgroup, and calculated the proportion of each particular goal type as compared to the total number of goal statements. Figure 1 presents percentages of students' statements in effective and ineffective CL teams referring to their goal preferences.
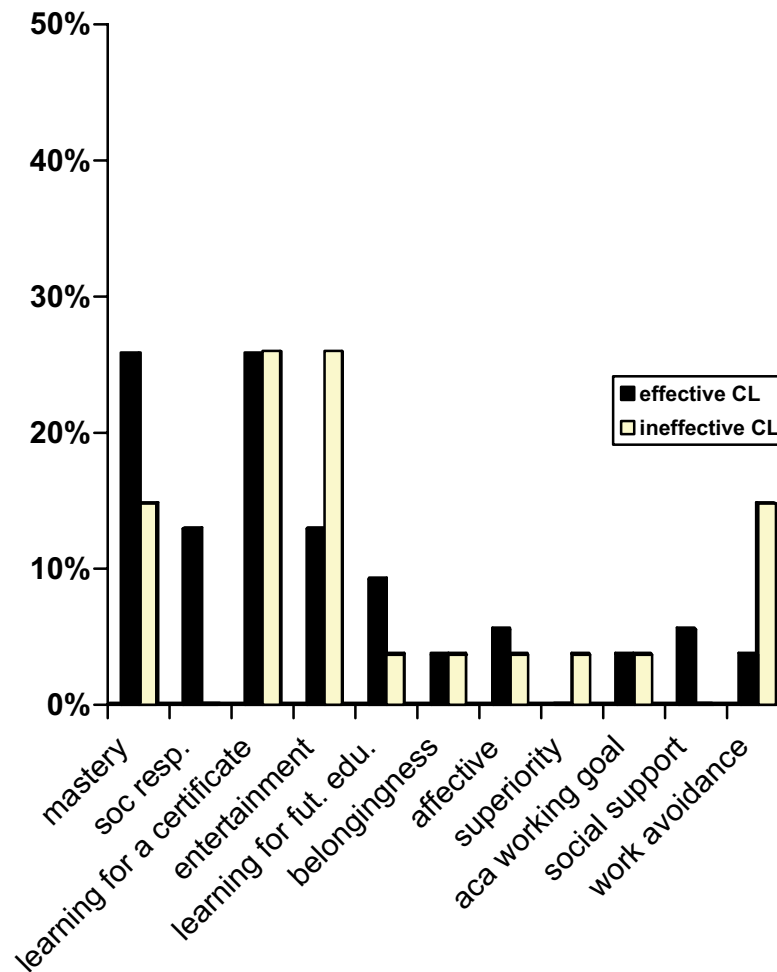
Figure 1: Goal profiles (interviews) of effective CL teams (*N* = 4) and ineffective CL teams (*N* = 4).

Figure 1 shows that in effective teams the most prevalent goals were mastery, learning for a certificate, social responsibility and entertainment goals. Interestingly, these goals are largely the same type of goals that were found to be positively related to the quality of CL in previous studies (Hijzen, Boekaerts, & Vedder, 2006). In ineffective teams, entertainment, learning for a certificate, mastery and work avoidance goals rated high. The most considerable, and expected, difference was the strong prevalence of entertainment goals in ineffective CL teams, they were as salient as the 'learning for a certificate' goal. In the effective CL teams, mastery goals were most salient and revealed learning for certificate goals for importance. Interestingly in this group, social responsibility goals scored as high as entertainment goals. Social responsibility goals were not mentioned at all in ineffective CL teams. Another striking difference concerned the percentage of statements on work avoidance goals, in ineffective

teams the percentage of statements on this goal domain was much higher than in effective teams.

The congruence coefficient (C) (Serafini, 1981 in Lemos 1996) allowed comparisons between the two profiles. The goal profiles of students in effective and ineffective CL teams showed a moderate congruity (coefficient C between the two profiles = .55), meaning that the profiles of effective and ineffective teams are only moderately comparable. Moreover, as expected, students in the ineffective teams were less conscious of their goals; fewer statements referred to goal preferences (27 statements) than in effective teams (54 statements). Also, the range of different goal preferences mentioned was smaller for ineffective teams than for the effective teams.

Compared to students self-reports about their overall goal preferences, many of the same goals were mentioned when they were asked to reflect on the actual CL setting (e.g., mastery, social support, belongingness and affective goal preferences). Surprisingly, self-determination, superiority/ individuality and material gain were not mentioned at all in the CL context. Conceivably, these goal preferences are not important in the CL setting. Furthermore, it was noted that mastery goals were more prevalent in the actual learning situation compared to the students' scores reported on the GIFI, a finding that was also detected by Lemos. She found that "The confrontation with the real classroom activities strengthens the focus of students' behavior within the academic dimension" (Lemos, 1996, p. 167).

Contextual factors and engagement in CL

Important to note is that goal preferences were rarely spontaneously mentioned while reflecting on task-relevant, task-irrelevant, or socially oriented task engagement during CL sessions. Groups pointed far more often at the context for explaining their CL. We asked all teams to explain instances of effective and ineffective CL. Results presented here are limited to the four ineffective and four effective CL teams.

Statements that explained successful CL in the effective teams referred to the group composition (17 statements). The size of the team ("*In a large team it is harder to keep your promises*") and the types of relationships among the team members were mentioned as reasons for cooperating successfully (*"We are friends, therefore we cooperate better". "You dare to say more, for example when somebody did not complete his part of the project". "We understand each other very well and our communication is exceptionally good, I think that is an important part of the success").* Students alluded to particularly motivated persons in the

group who contributed to successful CL (two teams), to improvements in teacher behavior in the sense that the teacher became less dominant and to students' improvement of cooperation skills. Improvement of school climate was also mentioned as an explanation for improvement in CL (more transparency). Several statements referred to the fact that the team was just good at working independently.

The ineffective teams explained their ineffective CL in terms of concerns about task characteristics (Some teams worked before the period of data-collection at tasks that were not real group tasks), teacher behavior (according to some of the participants, some teachers were just not capable of teaching; their lessons were unstructured, unclear and chaotic), absence of rewards and school context (school structure was experienced as chaotic).

More negative statements referring to contextual factors were made in the ineffective CL teams than in the effective teams. Thirteen statements referred to the curriculum. Many tasks were not real group tasks, they could easily be accomplished as individual tasks and no consultations were required to complete the task. The group tasks were often experienced as boring, non-supportive for a future career, too easy or unstructured. "*I think that the lessons de-motivate me. The tasks are just dead boring. Often I do not understand the purpose of the lessons*". Teacher behavior was mentioned as a reason for ineffective CL twelve times. Complaints varied from too little coaching "*I would like to get more support from the teacher. I mean … When I have a question and this person just gives you a book and says "It is in here" and walks away. What kind of help is this*", to chaotic lessons "*I really would like to know what the purpose is, I think that when she (the teacher) changes her teaching method all of a sudden, that she can not expect that the class will take her seriously*", and boring teaching methods "*She is reading the book, not knowing other ways to explain what we should do and how*". It was found that in case of too much autonomy, students were of the opinion that more teacher involvement was required. This was the situation in the ICT-class. Students were unsatisfied with the quality and quantity of help they received from teachers. They were unable to get support from the teacher when they were looking for help. For these students autonomy tended to correspond to teacher negligence. Group composition was mentioned seven times as an explanation of task-irrelevant engagement. Problems ranged from regular absenteeism of one of the group members or the dominance of group members who were absolutely not motivated. One team mentioned that they were rewarded individually while they worked on a group project. This was perceived as demotivating. Six students blamed the chaotic and unstructured school climate for ineffective CL instances. A statement referring to this issue is "*The organization at school is dreadful, you never know*

what to do, nothing gets settled, and I get so annoyed by that". Some teams acknowledged that they chatted too much or were not serious enough (6 statements). Two of the ineffective CL teams admitted that the most important reason for ineffective CL was that they were just not capable of working independently.

Case study of an effective CL team

In order to illustrate the role of goal preferences and students' perceptions of contextual factors in the classroom on the quality of CL, we will conclude the result section with a case study of a team ($N = 6$) that displayed high task-relevant engagement ($M = 3.4$, $SD = .90$) and low levels of task-irrelevant behavior ($M = 1.5$, $SD = .77$). The mean observation score of socially oriented task engagement was 3.2, $SD = .86$. We will compare this team with an ineffective CL team. The second team ($N = 3$) displayed low levels of task-relevant engagement ($M = 1.4$, $SD = .72$), high levels of task-irrelevant engagement ($M = 3.5$, $SD = .07$) and low levels of socially oriented task engagement ($M = 1.5$, $SD = .50$). This team initially consisted of four male ICT-students. One group member cuts classes on a regular basis and was therefore omitted from this in-depth study.

The effective team consisted of retail and administration students who were involved in the virtual company (see method section). The team consisted of five male students and one female. Interesting to note is that interviews with these students revealed that their goal preferences were very similar. All team members stated they learned to get a certificate ("*To get the certificate that is my only goal"*). However, most of the time certificate goals were mentioned in combination with mastery and social responsibility goals ("*I want to obtain my certificate and do it with the team. You will be a lot more experienced after this"*). Social support goals were mentioned as well ("*We think that everybody in the team deserves the certificate, so you'll try to help and motivate each other. You do want him or her to receive his or her certificate as well"*). Inspection of the GIFI goal profile showed that, as expected, social support ($M = 4.7$, $SD = .39$), and mastery ($M = 4.6$, $SD = .36$) were the most popular goal domains in this team.

The group composition was mentioned as one of the main reasons for an improvement of the quality of cooperative learning processes ("*The group is smaller now, the weakest persons left the team and we are now willing to sacrifice more for each other. Help each other with things. Like "Can I help you?" And we feel far more responsible for each other. You help each other and it is a win/win situation"*). At the time the project started ten team

members were involved, the least motivated students left the team in the course of the school year. Task-irrelevant engagement was common in the beginning ("*We just sat together for three hours and actually worked for 10 minutes at the most, the rest of the time we were chatting*"). Conflicts were also common at that time. The following statement referred to the behavior of a person that had left the team ("*He never kept his promises. He did not do anything. Time and again he would promise to do things, but he never did. If we said something about his behavior, he got angry*"). A person who is still a member of the team and showed little effort in the beginning of the project said *"Well, I said my life was very busy then, but others said you simply had other priorities".* At the time that the team got smaller and the team members started acting more responsibly this person's behavior improved significantly. In the beginning this team was not very good at solving conflicts ("*We were too afraid to start a major dispute, which could spread discord in the team*"). When the team got smaller and students got used to each other, conflicts were solved more easily. At the end they knew each other much better and comprehended how to treat each other and what to expect of each team member. Their fear of saying something about a group members' task-irrelevant engagement decreased over time. Another influence on the QCL was teacher behavior. In this particular case the teacher initially gave them too little autonomy which made them passive. One team member said: "*He guided too much, he was very dominant*". Later on, the teacher got less involved and the QCL improved. The team members increasingly took up their own responsibilities.

Case study of an ineffective CL team

Goals that students in the ineffective CL team mentioned most frequently were academic/ to get a certificate goals, statements that captured this goal are "*The only reason why I am here is to get my certificate, I am not interested in what we learn, because that is just dead boring*" Academic/ to prepare for a future education goals were also frequently mentioned. As one of the team members puts it: "*It's about getting my certificate, not about the stuff I learn here, because that is just not very interesting, I want to go to another program type after this study*". Inspection of the GIFI goal profile showed that, in line with previous findings, belongingness *(M = 5, SD = .00)* and affective goals were most prevalent *(M = 4.9, SD = .10)* for the team.

The high level of task-irrelevant engagement in this team was strongly related to the negative behavior of the group member who was often absent. A statement referring to this

issue is: "*T. really isn't motivated, he does not show up a lot and yes…that influences the group as a whole, it demotivates the group as well*". It was very difficult to plan group sessions in this team, because of T's high rate of absenteeism. In the end, they just decided to work without T. A second reason for high task irrelevant engagement scores in this group was the behavior of another group member, who -although physically present- showed very low engagement during CL. His task-irrelevant behavior can be explained by the fact that he actually wants to become an actor, and admitted he chose the wrong school. Again teacher support was mentioned as an important factor that influenced engagement levels during CL. This team (as was the whole class) was not satisfied with the quality and quantity of their teachers' support. Teachers were often unavailable when their help was required. Also the type of project that they were working on was not a real group project. According to these students (and other ICT students), many aspects of the project had to be prepared individually and they obtained individual grades afterwards, whereas the project was introduced as a group project. Furthermore, they were not interested in the curriculum itself, they said that it was not challenging and interesting. A statement illustrating this is "*Last year I started this course. When you ask me now what I have learned so far, I must say that it is close to nothing*".

DISCUSSION

Students' goal preferences in effective and ineffective CL teams

Effective CL processes seem to be associated with students' goal preferences as well as with their perception of contextual aspects and the appropriate context. We predicted task-relevant engagement to be dependent on a combination of social goals and mastery goals. We found that the difference between effective and ineffective CL teams lies precisely in the combination of these goals. We also found that it is essential to distinguish between different types of social goals. Comparison of effective and ineffective team members' self-reports suggested that belongingness goals might be more popular in ineffective teams. A negative relationship between students' belongingness (GIFI) goals and socially oriented task engagement in the ineffective teams was found. On first sight this finding may seem strange but it actually corroborates the findings presented by Wentzel (1989), namely that low-achievers consider making friends and having fun as valuable goals and that pursuing these goals might interfere with task-relevant engagement. It is important to keep in mind that this result only concerns ineffective CL teams. Perhaps these students are more concerned with

their well-being and therefore preoccupied with the social environment and cues that signal threats to friendships. The analysis of the goal profiles supports this notion; it showed that in ineffective teams, entertainment and work-avoidance goals are popular goals, while in effective teams mastery goals are equally important as certificate goals. Another valuable difference regarded the prevalence of social responsibility goals in the effective teams. Students in these teams reasoned that in their future career people will also expect them to be able to cooperate, while ineffective teams did not mention these goals it at all. Effective CL teams seem to be engaged in learning because they have a genuine interest in what they learn and they understand the value of CL. This finding seems in line with findings of a study of Levy, Kaplan, and Patrick (2004) who found that mastery oriented students' evaluated cooperation in the first place in terms of its contribution to their academic goals and were less concerned with social relationships.

Students in ineffective teams seem less conscious of their goal preferences than students in effective teams. Their goals were very broad. Although getting a certificate was in both type of teams one of the most popular goals, how and why they wanted to achieve that goal seemed to be of inferior importance in the ineffective group. A significant finding of this study is that not all students devote much thinking to choosing their goals and think about their goal systems (Conti, 2000). Earlier research suggested that formulating goals, especially goals that connect with and well-represent one's sense of self, can facilitate students' intrinsic motivation (Cantor *et al*, 1987; Sheldon & Kasser, 1995; Sheldon & Elliot, 1997). Hence, formulating goals in the classroom ought to be put on the teacher's agenda.

Contextual factors and engagement in CL

One of the major points made in this article is that students' engagements cannot be understood separately from the environment. In short, the type of task, the teacher, and the group composition were the most frequently mentioned factors for explaining effective or ineffective instances of CL. Effective and ineffective teams clearly had different appraisals of contextual factors that impacted on their quality of CL.

Ineffective teams explained their task-irrelevant engagement as a result of the group tasks. According to these students, many tasks were not genuine group tasks. They complained that many group tasks were boring, not supportive for a future career, too easy and not challenging enough.

Ineffective team members had many complaints about their teachers, who were often not there in case they needed help. A healthy balance between teacher guidance and student autonomy seems crucial for CL. Skinner and Belmont (1993) argued that student engagement is optimized when the social context fulfills children's basic psychological needs. These include the needs to be competent, autonomous, and related to other people. The *feeling of competence* is influenced by the amount of structure the teacher provides by communicating clearly about expectations and responding consistently and predictable to students' questions. Students in ineffective teams expected more assistance while cooperating. They also experienced a lack of explanations on the purpose of the lessons. Teachers' sloppiness in this respect was a recurring complaint. Students often did not know how to proceed because teachers were not clear enough about the purpose of the tasks, before they started. The *need for autonomy* is promoted when students experience autonomy support. However, more teacher involvement was required in a situation of too much autonomy as in the ICT-class. Teachers need to economize on autonomy generating learning situations, reserving that type of learning environment for situations where students are used to cooperate. At such a point they can decrease guidance and increase students' responsibility in the learning process (see also Boekaerts & Martens, in press).

Students' *need for relatedness* (Skinner & Belmont, 1993) is associated with the level of involvement, which refers to 'the quality of the interpersonal relationship with teachers and peers". The group composition was very important in explaining successful CL. Students in effective teams usually work longer in the same teams and feel more at ease with each other. Negative effects on the quality of cooperative learning may also arise when the group is too cohesive. Under such conditions group members might conform to group norms that are adverse to learning, in which case erroneous or incomplete solutions for problems or a lack of intersubjectivity may go unnoticed (e.g., Kanselaar & Van der Linden, 1984). However, it is a long way before cohesion becomes a problem. This study primarily points at a lack of cohesion as a motive for problematic CL. In ineffective teams, students had to deal with absent or strongly demotivated group members more often.

The quality of CL also depends on students' general abilities to cooperate. Students in ineffective teams mentioned the fact that they were just not good at working independently. Also these teams mentioned that they had chatted too much, meaning that for them entertaining and belongingness goals were more important than mastery goals. In effective teams students explained the successful CL, by the fact that they were simply good at CL, while in the ineffective teams students admitted that they were not capable of dealing with the

independence that comes with CL. This finding implies that it is important to teach students the skills and knowledge to cooperate and for teachers to guide the CL process along (Gillies & Ashman, 1996; Hoek, Van den Eeden, & Terwel, 1999; Oortwijn, Boekaerts, & Vedder, in preparation; Webb & Farivar, 1994).

Interesting to note is that ineffective and effective teams came from the same classrooms and were therefore enrolled in the same CL settings, therefore one contextual factor can not solely explain the quality of CL. We assume that the combination of the above mentioned contextual factors is crucial in explaining the quality of CL. For example the tasks may be boring at some point, but with a motivated teacher and team members, students may still be capable to self-regulate the motivation process (Boekaerts, 2005).

Recommendations

The goals that were identified in this study were spontaneously mentioned *student goals*. They differ somewhat from the goals that were specified prior to the research in the GIFI. Lemos (1996) suggested that students bring a set of general goals to the classroom and implement these when faced with the real classroom setting. We think that the general goals that students bring to the classroom are rather abstract goals and that they still need to adapt them to the local CL conditions. The interviews and the stimulated recall sessions allowed us to register context-sensitive goals because, the setting possibly gave a type of context and relevance to thinking about goals that made students more aware of their goals and their importance in the specific context of the CL. If indeed reflecting on and formulating goals is important, than the stimulated recall setting situation in this study might be seen as a proto type approach to encouraging it throughout the school program in order to make students more aware of their goals. Ideally, reflection on students' goal preferences should be a recurring element of the curriculum, especially in secondary vocational education where the drop-out rate is very high. As explained in the introduction, dropping out of school often is an outcome of underlying motivational problems that students have experienced, which might have been caused by a mismatch between students' goal preferences and school goals. Goal reflection can be a means for enhancing students' motivation, so that they become more aware of the goals they want to achieve and think of strategies how to achieve these. Discussing goal preferences in order to make students aware of the role these goals play in the learning process might be an important step towards more successful CL (Hijzen, Boekaerts, & Vedder, 2006). Students should be invited to think about their own goals and about the links

between goal preferences and the goals presented to them by teachers, instruction methods, course books, and other students. Such reflection might help them to adopt teacher-set learning goals and self-regulate their learning more efficiently (see Boekaerts & Corno, 2005).

CL may be a way to enhance students' motivation for learning, provided that students are aware of their goal preferences and CL is well implemented. In order to predict the quality of students' CL processes more accurately, more (longitudinal) research on contextual factors is needed. Important to note is that the quality of CL differed within settings, therefore a combination of personal goal preferences and contextual factors might explain the quality of CL best. Some teams are able and willing to cope with obstacles, distractions and draw backs, while others are not. As we discussed previously, this highly depends on what goal preferences they had in the first place. If, for example, students' most important goal is to have fun, they will easily get distracted by ill designed group tasks and poor teacher behavior, while students whose mastery goals are salient might try harder to cope with ill-structured CL settings. Nevertheless, a well-designed CL setting is crucial, because it triggers, promotes, stimulates or hampers certain goal preferences. Although the comment that we started the article with *"It is just dead boring at school, I don't think I actually learn something at all, I hope I will at least learn something in my traineeship"* reflected a lot of dissatisfaction and seemed very negative, it also gives reason for hope. It means that students are in school because they want to learn something. Schools are no unchangeable institutions and this study yielded some interesting and specific leads, perceived and stated by students themselves, which may promote better CL and increase students' general motivation for school.

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