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

Hijzen, D.M.

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Chapter 6

GENERAL CONCLUSIONS AND DISCUSSION

This final Chapter has two main aims. Firstly, we will discuss the conclusions of the four separate studies and draw general conclusions. Secondly, we will exemplify what the implications of these conclusions are for theory and practice, illustrated by an additional study on teacher perceptions of the quality of CL in their classrooms.

Answering the general questions

The main aim of this study was to investigate the role of students' goal preferences in CL settings and to determine factors in the classroom context that teachers can manipulate in order to promote successful CL processes. Special attention was paid to differences between students related to their gender, program type and ethnocultural background. By gaining insight into these relationships we intended to uncover leads for future interventions aimed at improving students' motivation for CL and the quality of their learning processes as well as preventing drop-out in the long run. Four broad, explorative questions were central to this dissertation. Namely:

1. What is the relationship between students' goal preferences, contextual factors in the classroom and the quality of CL?
2. How can effective CL teams be distinguished from ineffective ones, and what distinguishes them in terms of the students' goal preferences and perceptions of contextual factors in the classroom?
3. Which teacher related conditions coincide with effective CL processes and which conditions are related to failing CL processes, in the course of a year?
4. Can we distinguish between separate profiles of person variables (Dutch language proficiency and goal preferences) and context variables (social resources and school belonging) that account for variations in the quality of CL and does ethnic background play a role in explaining differences in these profiles and the quality of CL?

These questions were dealt with in four studies, presented in Chapters two, three, four and five of the thesis. In Chapter two we described the relationship between students' goal preferences, contextual factors and the quality of CL processes. Findings of the study described in this Chapter functioned as a framework for the other studies. In Chapter three we presented an in depth study exploring how effective CL teams could be distinguished from ineffective teams in terms of students' goal preferences and their perceptions of contextual factors. In Chapter four we presented a longitudinal study on the relationship between teacher steered conditions for CL and the quality of CL. In Chapter five we described a study that investigated the role of students' ethnocultural background and the quality of CL.

What is the relationship between students' goal preferences, contextual factors in the classroom and the quality of CL?

As to the relationship between students' goal preferences and the quality of CL we predicted that belongingness, social support and mastery goals are positively and superiority/ individuality goal preferences negatively related to the quality of CL. We found that social support goals were strongly related to the quality of CL. Also students' belongingness and mastery goals were related – although slightly less- to the quality of CL. This confirms previous findings of studies by McInerney, Hinkley, Dowson, and Van Etten (1998) and Wentzel (1993), suggesting that a combination of social and mastery goals is preferable in social learning settings, such as CL. Unexpectedly, students' superiority/ individuality goals were not significantly related to the quality of CL, while we expected that students, who are superiority minded, to be less capable of working in CL settings since they were expected to outperform others and less cooperatively minded.

As to the relationship between the quality of CL and perceptions of contextual factors in the classroom we found that students' evaluation of the extent that they were taught CL skills at their present schools was most strongly and positively related to the quality of CL. This finding confirms previous findings (e.g., Gillies & Ashman, 1996; Hoek, Van den Eeden, & Terwel, 1999; Webb & Farivar, 1994). Also related to the quality of CL were students' perception of the teachers' clarity on rules for CL, teacher monitoring behavior, perceived availability of peer academic and emotional support, and perceived availability of teacher support.

In line with several other studies, (e.g., Anderman, 1999; Charlesworth & Dzur, 1987; Cosden, Pearl, & Bryan 1985; Eccles, 1987; Wentzel, 1991) which showed that female students are more inclined to engage in behavior associated with successful CL, such as helping others, we found that females showed overall higher scores than male students on the quality of CL. They also reported higher preferences for social support and mastery goals whereas male students reported higher preferences for superiority goals. Consequently, these findings suggest that female students, more than their male peers, feel secure in CL settings.

Our study in secondary vocational schools dealt with students enrolled in ICT/engineering, retail and administration, health and welfare, and food and tourism programs. Male and female students were not equally distributed over these program types and this uneven distribution might have led to a program type effect that masks an underlying gender effect. Therefore, we explored program type effects for male and female students separately. Interestingly, we found a positive relationship between students' superiority goals and the quality of CL in the ICT/engineering (male) subgroup, whereas in the health and welfare male subgroup no such relationship was found. In the food male subgroup a negative relationship was found.

We concluded that the quality of CL was best predicted by a combination of students' social support goals, their evaluations of the extent that they were taught cooperation skills, teachers' monitoring behavior, and the availability of academic and emotional peer support. A salient predictor in the classroom context was the students' perception of the extent that they had been taught the necessary CL skills.

How can effective CL teams be distinguished from ineffective ones, and what distinguishes them in terms of the students' goal preferences and perceptions of contextual factors in the classroom?

In the study described in Chapter three we distinguished effective CL teams that predominantly show (social) task-relevant engagement (being concentrated and active) during CL from ineffective teams that show task-irrelevant engagement (being distracted, and chatting most of the time), in terms of their goal preferences and perceptions of contextual factors in the classroom.

The goal questionnaire revealed that effective teams' most prevalent goal preferences were *affective*, *social support* and *self-determination* goals, whereas ineffective team members' most prevalent goal preferences were *belongingness*, *affective* and *self-*

determination goals. Hence, the most remarkable distinction between these teams concerned their belongingness and social support goals. Effective team members were inclined to report somewhat lower scores on belongingness goals than ineffective team members, while the reversed pattern was observed for social support goals. In effective teams mastery goals were more important than belongingness goals. Remarkably, only one goal domain was related to students' engagement scores, namely their belongingness goals. A negative relationship was found between students' belongingness goals and task-relevant engagement in the ineffective teams. Inspection of students' interview statements –where the full range of possible goal preferences was considered- showed that 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. The most substantial dissimilarity in goal preferences was the strong prevalence of entertainment goals in ineffective CL teams. In line with Sheldon and Kasser (1995) and Sheldon and Elliot (1999) we found that students in ineffective teams seem less conscious of their goal preferences than students in effective teams. Their goals were very broad. Important to note is that goal preferences were not often specifically mentioned in explaining task-relevant, task-irrelevant, or social task related engagement during CL sessions. Groups pointed at the context far more often to explain their CL. Task characteristics, group composition, and teacher behavior were often mentioned as reasons for effective or ineffective 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. Also they complained that the tasks were boring, too simple and not challenging enough. This confirms findings of Webb and Palincsar (1996) and Cohen (1994) suggesting that for effective CL students perceive the tasks as challenging, as hands-on, and promoting interdependency. In line with Sharan and Sharan (1992) and Chin, Salisbury, Pearson, and Stollak (1999) we found that students in effective teams usually worked longer in the same teams and felt more at ease with each other than team members in ineffective teams, who often had to deal with absent or highly unmotivated team members. Ineffective team members had many complaints about their teachers, who were often not there in case they needed help. Furthermore, they mentioned the fact that they were just not good at working independently.

Which teacher related conditions coincide with effective CL processes and which conditions are related to failing CL processes, in the course of a year?

In the study presented in Chapter 4, we explored the conditions that teachers in secondary vocational education created in order to promote students' CL processes. We found that the extent that students were taught skills and knowledge for CL and teachers' clarity on rules for CL were highly related to the quality of CL, during all three waves. In other words, findings of the study presented in Chapter 2 can be complemented by stating that -also in the long run- it is important that teachers explicitly teach the skills, knowledge and rules for CL. The quality of CL was at its best during the second wave when scores on all teacher related conditions were also highest. Hence, teachers' control behavior and the quality of CL were also positively related at the second data point, while we expected that a decrease in teachers control behavior would predict the quality of CL at a later stage. However, during the third data-wave only the scales that measured students' perceptions on the extent that they were taught skills and knowledge for CL, and teachers' clarity on rules for CL were highly related to the quality of CL, whereas the scales that measured students' perceptions of their teachers' control behavior were indeed less related to the quality of CL.

When we distinguished between the group of ineffective and effective cooperators we noticed that the teacher related conditions made the difference: at all stages effective cooperators had higher scores on all the scales, in particular on the extent that they were *taught skills and knowledge for CL*. Furthermore, we signaled a tendency that the weak cooperators perceived a major decrease in teachers' monitoring behavior after the second data-wave. A similar trend was found in relation to teachers' intervention behavior. The effective cooperators perceived almost no change in teacher monitoring and intervention behavior after the second data-wave.

Can we distinguish between separate profiles of person variables (Dutch language proficiency and goal preferences) and context variables (social resources and school belonging) that account for variations in the quality of CL and does ethnic background play a role in explaining differences in these profiles and the quality of CL?

Four student profiles were identified; a school-disaffected, a weak communication/school bonding, a school-adjusted and a frustrated profile. Not surprisingly, students who were grouped in the *school-adjusted profile* showed the highest scores on CL. This profile was characterized by goal preferences for social and mastery goals, low scores on superiority goals, high perceived availability of social support and positive scores on school and peer identification. The *school-disaffected* profile had the lowest scores on CL. This profile was

characterized by no clear goals, a lack of social resources and peer/school identification. Students from different backgrounds were disproportionately distributed. The *weak communication profile* was characteristic of Caribbean students. Students with this profile were dissatisfied with their Dutch language proficiency. Also, they scored relatively high on school alienation. The scores on the availability of academic and emotional peer and teacher support were high, meaning that students in this profile were satisfied with the amount of support they received, but their goal preferences were diffuse. Interestingly, superiority was the most valued goal domain in this profile. The *frustrated profile* was characterized by clear goals, but dissatisfaction with the availability of academic and emotional support, especially from teachers. Furthermore, they were slightly low on identification with peers and school and were considering changing their school environment. Somewhat disappointing, the highest proportion of students fell in this cluster. The lowest proportion of students fell in the weak communication cluster. Contrary to our expectations we had to conclude that students' ethnocultural background had neither a direct effect on the quality of CL nor on students' goal preferences. In summary, we were unable to confirm the hypotheses that specific ethnic groups were better equipped for CL (Palfreyman, 2001; Wittebrood & Keuzekamp, 2000). However, we were able to determine ethnicity-related variables (Dutch language proficiency, school alienation) that are likely affected by educational interventions.

As was shown in Chapter two, three, and five, we concluded that with respect to students' goal preferences, social support and mastery goals were most vital in predicting the quality of CL. Having clear goals in the first place was also noteworthy in predicting effective and ineffective CL processes. All studies showed that the classroom context was -even more- crucial in predicting the quality of CL, especially the extent to which students were taught the appropriate knowledge, skills and rules for CL was found to be a crucial -and lasting- precondition of successful CL. The fact that some teams were able and willing to cope with hindrances, distractions and obstacles while working in CL settings, whereas others were not, highly depends on what goal preferences they had in the first place. A well-designed CL setting is decisive, because it elicits, promotes, or hinders certain goal preferences. Furthermore, as was found in Chapters two and five, background variables such as ethnocultural background, gender and program type had no direct effect on the quality of CL. Instead, they indirectly influenced the quality of CL.

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 as an instructional process.

These conclusions are promising for finding leads for future intervention purposes; stable factors, such as students' ethnocultural background, gender and program type, as well as their goal preferences are difficult to change. These factors have been found to be less essential in predicting the quality of CL than perceptions of the classroom context, which is likely to be much more susceptible for intervention purposes.

GENERAL IMPLICATIONS FOR THEORY AND PRACTICE

Students' goal preferences and the quality of CL

With respect to the relationship between students' goal preferences and the quality of CL, this dissertation underlined the need for promoting students' social and mastery goals. A significant finding of this study is that not all students devote much thinking to choosing their goals, whereas formulating goals, can facilitate students' intrinsic motivation (Sheldon & Kasser, 1995; Sheldon & Elliot, 1999). Hence, our first recommendation concerns the importance of discussing personal goals in order to make students sensitive of the role these goals play in the learning process. The goals that students bring into the classroom are often abstract goals, which still need to be adapted to the CL setting. Especially the study that was described in Chapter three suggested that inviting students to talk about their goals could be an important step towards more effective CL; perhaps the stimulated-recall setting provided a favorable context for thinking about one's goals; it made students more aware of their goals and their importance in the specific context of CL. In other words, the stimulated-recall setting might be considered as an ideal educational intervention to make students more sensitive of their goals. Ideally, this should be a recurring element of the curriculum, especially when we consider the high drop-out rates in secondary vocational schools. Dropping out of school often is an outcome of underlying motivational problems that students have experienced. Students should be invited to think about their own goals and about the links between their personal goals and school goals. This reflection might facilitate adoption of teacher-set learning goals and self-regulation of their own learning goals (see Boekaerts & Corno, 2005). Moreover, since social support goals were found to be important in predicting the quality of CL, teachers should create a classroom context where students are stimulated to rely on each other for help.

Perceptions of contextual factors and the quality of CL

The studies reported in this thesis suggest that, more important than students' goals, the classroom context was crucial for the quality of CL. We would therefore like to end this dissertation with additional findings that underline the importance of paying attention to the classroom setting and especially to the teachers' role in CL.

A number of teachers completed an abridged version of the questionnaire that aimed to measure conditions for CL and also participated in an interview about CL in their classrooms. Comparisons of teacher and student scores yielded some interesting findings that together point toward a call for improvement of adaptability of teacher behavior during CL. Teachers' scores on all teacher behavior items was (much) higher than students' scores. This finding indicates that -according to the teachers- they were far more involved and active during CL than evaluated by the students. For example, teachers were more positive about the cooperation skills that they taught their students than the students themselves. This finding is of special importance when we consider findings of the in-depth study described in Chapter two; students in ineffective CL teams mentioned that they were not good at cooperating and that they missed the skills for effective CL. When we contextualize this finding in the overall results of the study (the strong relationship between the quality of CL and the extent that students were explicitly taught CL skills), we may conclude that students perceive their teachers as less monitoring and intervening than the teachers themselves. Remember that the study presented in Chapter four showed that after a one year period, ineffective cooperators reported lower levels of teacher instruction and teacher monitoring.

These same teachers also participated in interviews about the way CL was realized in their classes, their ideas on the usefulness and feasibility of working with CL methods and the quality of their students CL skills. More than half of the teachers answered that students cooperatively completed tasks in their lessons, however the way this took place was often less organized and structured than CL settings are meant to be designed by educationalists. Some of the statements suggested that teachers do not always set up highly structured CL settings with real group tasks and clear notions about group compositions: *"Simply make an assignment together"* or *"They don't get a real group task but they have to make assignments together. They can complete these in couples or in larger groups, as long as they are engaged and learn something..."*.

Teachers were asked about their attitudes towards CL. Most teachers were positive about the general usefulness of CL. Most teachers mentioned that practising CL skills is

important, because students need these skills in their future career: *“Improving social skills is very important. Being able to cooperate in the future, that is what it is all about, they learn to solve a problem together, and in their future professions they also have to solve tasks together”*. However, only a small percentage of the teachers thought that students learn more in CL settings than in traditional settings. An often mentioned disadvantage of CL was the time aspect. Coaching different teams and solving conflicts takes a lot of time. One teacher stated *“When they enter the classroom, they have to get their books and pencils and so on. I have to check who is absent. This already takes ten minutes and then you have to start explaining the topics, compose groups, well yes there is too little time”*. Many felt to have too little instruction time and that in the remaining time they insufficiently covered the prescribed curriculum. They compared this to more traditional instructional settings and were of the opinion that more instruction time and curriculum coverage would be realized using more traditional approaches. This suggests a bad prospect for CL, because it may be an early signal of re-lapse and may reflect their unwillingness to invest in well structured CL methods.

Many teachers were ambiguous about the quality of their students' CL skills. A teacher stated: *“I notice that students are not really capable of CL. They don't take any initiative. I have to push them and even then it still goes wrong often. I think CL is very important, but also really difficult to make it work.”* Another teacher said: *“On the one hand I think it is important that students learn to cooperate, because they need the skills for their future career. However, I think that nowadays students cooperate too often and it demotivates them. I think that the individual student receives less attention”*.

Teachers mentioned that most students are extrinsically motivated, and have difficulty working independently in CL settings. Relevant statements were *“I noticed that you have to set up a strong extrinsic motivation, control them a lot”* or *“I don't notice that students get more independent by CL. The assignments they hand in are of a very low quality. This is often caused by the fact that they receive a mark that does not seriously add up to their total grade”*. These findings nicely illustrate the gap between student and teacher perceptions on conditions for CL. The teachers are of the opinion that they instruct and control CL processes sufficiently and more or less hold their students responsible for ineffective CL process. Even though teachers believe that they invest sufficient time in teaching CL skills and knowledge, and that they control CL processes, it may be necessary to encourage them to invest more time in the preparation and reflection on CL lessons and the reasons why this form of learning is beneficial for students.

Hence, our most central recommendation concerns the teachers' role during CL. They should carefully think about how to organize the CL setting in terms of group composition, task characteristics and rewards. Teachers should pay ample attention to and explicitly teach the necessary skills for learning in CL teams. More specifically, as mentioned in Chapters two, three, and four, it is crucial that teachers teach their students how to listen to each other, to evaluate the group process, to discuss, to support group members, to give an opinion, or to solve group conflicts. Secondly, it is important that teachers monitor the CL process carefully, which means that they need to walk around in the classroom, frequently check with the groups and ask them how they are doing. Thirdly, teachers need to be aware that availability of peer support is essential for effective CL, emotional as well as instrumental support. Teachers should encourage students to provide this type of support, and create conditions to facilitate this support.

Finally, although the study in Chapter five showed that ethnocultural background had no direct relationship with the quality of CL, students' communication skills are very important in CL setting. Therefore we think that improving students' communication skills should be given special attention in the curriculum and in class organization. Actually, in senior vocational high schools in the Netherlands generally, students' Dutch language proficiency is taken for granted, as something that was given sufficient attention in students' preceding school career. Suggestions for future intervention programs therefore concern enhancing communication competence and paying attention to differences between Dutch and immigrants' language proficiency in class.

LIMITATIONS OF THE STUDY

This thesis concludes with some suggestions for future research related to particular limitations of the present study. The most important limitations of this study concern a sampling bias favoring girls and the significant loss of subjects in the course of data-collection. Boys are underrepresented at all data-waves. This was due to the fact that relatively many programs of health and well-being participated. These programs are traditionally favored by girls. Furthermore, students enrolled in cognitively less demanding programs were underrepresented, while students enrolled in cognitively more demanding programs were overrepresented. Last but not least, only 260 students completed the questionnaires at three data-waves. With this high attrition rate we cannot exclude the possibility that our findings are only generalizable to students that attend class frequently and

persistently and do not drop out. Perhaps our findings paint a more positive picture in terms of students' motivation and the quality of cooperative learning than warranted for the whole population of senior vocational high schools. It would be interesting to find out more about the non-participating students. Did they drop out and if so were their reasons for drop-out related to a mismatch between their personal goal preferences and the school imposed goals? Were they dissatisfied with particular aspects of the classroom context? Perhaps we ended up with a selection of the highly motivated students, while actually having more insight in the behavior and reasons of the less motivated students would be particularly interesting for this type of research. After all, we wanted to find out more about the role of students' motivation, as represented by students' goal preferences for students' learning and school adjustment. More in general it would be interesting to replicate the study with a larger and more evenly distributed group of subjects at all data-waves.

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