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Perceived classroom goal structures as predictors of students' personal goals

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ABSTRACT

This study focused on the question of how to enhance a mastery-goal orientation in the classroom. We started from the perspective of the achievement goal theory, which assumes that the goals that students have (personal goals) relate to the goals that are set in the classroom (classroom goal structures). In classrooms where teachers focus on learning and effort -instead of normative standards and social comparison- mastery goals are enhanced. This type of classroom can be endorsed by focusing on the following classroom structures: **T**ask design, **A**utonomy, **R**ecognition, **G**rouping, **E**valuation, and **T**ime (TARGET). The present study investigated how classroom goal structures as perceived by students are related to students' personal goals. Based on survey data from 501 students from three secondary schools in the Netherlands, we found that the Task design dimension, concerning designing challenging and varied tasks, and the Time dimension, concerning e.g., pacing, predicted both mastery-approach and avoidance goals. Our findings provide insight in how perceived classroom goal structures are related to students' personal goals that focus on understanding/competence, thus informing teachers and educational developers where to start when it comes to improving student motivation.

Introduction

'I am not lazy, I am simply very motivated to do nothing in class' (Quote from a secondary school student during a conversation about what motivated her in class).

As illustrated by the example above, the question of how to enhance students' motivation is still a major challenge for secondary school teachers worldwide (OECD, 2015). For example, Maulana et al. (2017) indicated that motivating students is one of the most complex competences for teachers: in the Netherlands, less than 60% of the teachers succeed in involving students in the classroom by using activating instruction. In line with these findings, the OECD (2015) report indicated that many Dutch students are not motivated. This raises the question of how we can motivate students in secondary schools. In the present study, we approach this question through the lens of the achievement goal theory. More specifically, we are interested

in how the goals that students have (students' personal goals) relate to the goals that are set in the classroom (classroom goal structures). Based on İlker and Demirhan (2013) and Lüftenegger et al. (2017), we assume that schools and especially teachers can promote different students' personal goals by focusing in their classrooms on either developing competence in terms of new skills and knowledge (mastery-goal oriented) or on demonstrating competence in comparison to others (performance-goal oriented).

Although many studies have investigated either students' personal goals or classroom goal structures, little research focuses on the relationship between classroom goal structures and students' personal goals (Luo et al., 2011). Furthermore, researchers have tended to focus on a more general perspective of the classroom without focusing on specific instructional dimensions. Only a few studies have examined the multitude of instructional dimensions as proposed by Ames (1992; see Lüftenegger et al., 2017 for examples). Finally, previous research has mostly examined a general perception of the classroom from the teacher's perspective; not many studies investigate the multitude of instructional dimensions from the student's perspective, even though students are generally considered a reliable source of information (Raudenbush, 2008; Rowan & Miller, 2007).

Therefore, this study focuses on the relationship between perceived classroom goal structures and students' personal goals, taking into account the multitude of instructional dimensions from a student's perspective. In the following, we present our literature review on achievement goal theory, classroom goal structures, and, we discuss the TARGET model, which describes how the learning environment can be organised in such a way that it enhances mastery goals.

Literature review

Achievement goal theory

The achievement goal theory characterises goals using two constructs: mastery goals and performance goals (Ames, 1992; Deemer, 2004; Meece et al., 2006). Students with mastery goals focus on engaging in learning with the purpose of developing their competence, whereas students with performance goals focus on demonstrating their ability relative to others. This dichotomous model was followed by two revisions, resulting in a trichotomous model, where performance goals were separated into a performance-approach and a performance-avoidance component (e.g., Elliot & Church, 1997; Harackiewicz et al., 2002) and a 2 × 2 model where the approach-avoidance distinction was also applied to the mastery goal construct (Elliot, 1999). In these models, approach goals focus on acquiring positive outcomes and avoidance goals focus on avoiding negative outcomes. Further adjustments to the theory include an emphasis on the importance of taking into account social goals (for example, friendship goals for students) and the inclusion of relational goals for teachers, such as the desire to work with children or wanting to build meaningful relationships (see Butler, 2012; Horst et al., 2007). Also, more studies have started to take a multiple goal perspective (Vansteenkiste et al., 2009), where individuals may simultaneously endorse both mastery and performance goals.

Research on mastery goals is predominantly consistent in its findings (see also Rolland, 2012). Researchers have shown that mastery goals are related to adaptive learning behaviours and cognitions, including positive affect, a sense of self-efficacy, incremental views of intelligence, high levels of cognitive engagement, the use of deeper processing strategies, and improved task performance (Lüftenegger et al., 2012; Meece et al., 2006). In contrast, research on performance goals is less consistent; for example, performance-avoidance goals have been related to less adaptive beliefs about learning (e.g., Elliot & Church, 1997), whereas performance-approach goals have been found to be related to positive effects on achievement (e.g., Wolters, 2004). Kaplan et al. (2002) found no differences between these two forms of performance goals, with both performance-approach goals and performance-avoidance goals being related to higher reports of disruptive behaviour.

Classroom goal structures

Considering the importance of mastery goals, researchers started to think about the question of how a mastery-focused classroom could be endorsed; this was the starting point for research on classroom goal structures (Ames, 1992). As was mentioned in the introduction, this line of research assumes that the type of goals that are set in the classroom (i.e., classroom goal structures) influences the type of goals students set for themselves (i.e., students' personal goals; İlker & Demirhan, 2013; Rolland, 2012). In addition, it is assumed that these classroom goal structures reflect teachers' goal orientations, i.e., the goals teachers personally set for themselves when teaching (Ames, 1992).

Two different messages may be conveyed to students depending on whether the classroom is characterised by mastery or performance goals. In mastery-oriented classrooms, students focus on engaging in activities with the purpose of developing their competences. Students find satisfaction in their interest in the task and the challenge of the task. Furthermore, in such a classroom, students use their past performance as a standard for judging task success. According to Deemer (2004), mastery-oriented classrooms are taught by teachers who focus on teaching for learning and who foster caring and a sense of belonging.

In line with findings regarding personal mastery goals, as described in the previous section on students' personal goals, researchers have indicated beneficial effects of mastery-oriented classrooms as well. Focusing on mastery goals in the classroom has been related to outcomes such as interest, affect, effort, persistence, creativity, cognitive learning strategy use, and academic performance (Ames, 1992; Church et al., 2001; Meece et al., 2006; Patrick et al., 2011; Peng et al., 2013; Wolters, 2004). Moreover, it has been related to lower reports of disruptive behaviour (Kaplan et al., 2002). Negative effects of a decline in mastery goal emphasis have also been found. For example, Urdan and Midgley (2003) showed a decrease in intrinsic motivation, in positive affect, and in achievement when students' perceptions of mastery goal structures in the classroom declined.

In contrast to mastery-oriented classrooms, performance-oriented classrooms focus on demonstrating one's ability or avoid appearing to lack ability. Here, students find satisfaction in outperforming their peers and in meeting or surpassing performance standards (Deemer, 2004; Meece et al., 2006). Research shows that performance-oriented classrooms

are related to maladaptive educational behaviours such as self-handicapping and avoiding help-seeking (Huang, 2012; Patrick et al., 2011). Moreover, Wolters (2004) found that performance goal structures in classrooms were positively related to students' procrastination and negatively to achievement.

Organisation of the learning environment: TARGET

Classroom goal structures can be manipulated in such a way that they benefit student learning and learning outcomes (Deemer, 2004). Deemer (2004) indicated that it is important to organise the learning environment in such a way that it helps students to set their own standards for performance, focus less on social comparison, acknowledge the importance of learning new skills and competences, and to persist in challenging learning situations. According to Deemer (2004) and Lüftenegger et al. (2013), several dimensions are involved in designing such a learning environment: **t**ask design, **a**uthority, **r**ecognition, **g**rouping, **e**valuation and **t**iming (acronym: TARGET).

The first dimension, task design, is about designing learning activities. Designing varied and challenging tasks and learning activities that actively involve students will enhance a mastery goal orientation (Ames, 1992; Lüftenegger et al., 2017). The second dimension, authority, encompasses involving students in choices regarding their own learning and allowing them to feel in control of and responsible for their own learning (Deemer, 2004). The third dimension, recognition, concerns recognising individual effort and progress through feedback. Grouping, the fourth dimension, concerns thinking about variations in grouping, that is, individually, in dyads, or in small groups. The fifth dimension concerns evaluation. Evaluation should be individual and focus on developing competence, effort and the learning process, instead of on normative scores, such as grades. The final dimension concerns time and relates to taking into account students' individual needs in pace and workload. It also includes having students plan their own learning process (Lüftenegger et al., 2013). The TARGET dimensions overlap, for example, evaluation and recognition, but at the same time, each dimension has its idiosyncratic contribution to a classroom design. Therefore, Lüftenegger et al. (2013) stated that it is important to include all aspects in the design of learning processes.

Taking into account the difficulty teachers experience in motivating their students as well as the positive effects of mastery goals that research has revealed, we believe that it is important to gain more insight into the relationship between classroom goal structures and students' personal goals. Therefore, in this study, we examine which types of classroom goal structures teachers endorse, which personal goals students set for themselves, and how these are related. As we mentioned above, more research is needed into the relationship between classroom goal structures and students' personal goals (Luo et al., 2011), whilst examining a multitude of instructional dimensions from the student's perspective. Therefore, in this study we investigate how classroom goal structures as perceived by students are related to students' personal goals and focus on the six TARGET dimensions that endorse a mastery goal orientation in the classroom. The following research questions guide this study:

(1) What kind of classroom goal structures do secondary school students perceive?
(2) How are these perceived classroom goal structures related to students' personal goals?

Method

Participants and design

Data were collected through a digital questionnaire, distributed two months after the start of the school year 2016–2017. A convenience sample (Etikan et al., 2016) of 501 students in grades 9 to 12 in three secondary schools in the Netherlands participated in this study (48% girls, mean age = 16.2 years old). These schools were asked to participate in the study, as they were part of the network of schools that our teacher education programme is affiliated with. Team leaders selected the classes that were to participate in the study. They decided to focus on upper grades (grades 9–12). As we did not ask the team leaders for their reasons underlying their decision, we can only speculate whether other reasons than practical ones have influenced this selection.

The questionnaire was completed during a Dutch lesson, on computers or tablets. Since most students were minors, their parents were informed about the study, the voluntary nature of the study, confidentiality and anonymity, and the option to not have their child(ren) participate in the study. All minors were allowed by their parents to participate in the study. Before the start of the questionnaire, all students, minors and 18+, were informed about the study as well and given the choice to opt out of participation. All students attending class on the date of data collection decided to participate in the study.

Variables and instruments

Next to variables related to classroom goal structures and students' personal goals, the questionnaire contained questions on background characteristics such as gender, age, and the year they were in, as well as the school they were attending. Student perceptions of classroom goal structures were measured using the Goal Structure Questionnaire (GSQ; Lüftenegger et al., 2017). This instrument, consisting of 32 items, was developed to measure perceived classroom goal structures (i.e., the TARGET dimensions), using a six-point scale ranging from 1 (= strongly disagree) to 6 (= strongly agree). The items tap into six scales, reflecting the TARGET dimensions: task design (four items), autonomy (six items), recognition (seven items), grouping (four items), evaluation (six items), and time (five items). The internal consistency of each of the scales ranged from alpha =.68 for grouping to alpha = .86 for evaluation (see Table 1). Sample items are 'In this subject, the tasks are designed to be rich in variety' (task), or 'In this subject, it is important to the teacher that we express our personal opinions' (authority). The GSQ was translated from German to Dutch by the researchers, and then back-translated by a near-native speaker. All differences were discussed with the authors of the GSQ and consensus was reached. The changes mainly concerned the wording of items. The students were asked to answer these questions thinking about the subject Dutch, as this is one of the mandatory subjects for Dutch secondary schools throughout all grades.

Students' personal goals were measured using the Achievement Goal Questionnaire-Revised (Elliot & Murayama, 2008). This questionnaire consists of 12 items tapping into four scales measuring the 2 × 2 goal orientation, that is, mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goals. All scales showed

Table 1. Bivariate correlations, descriptive statistics, and reliabilities.

	1	2	3	4	5	6	7	8	9	M	SD	α
Clasroom goal structure												
1.Task design										3.43	1.00	.74
2.Autonomy	.44**	1.00								3.68	1.00	.82
3.Recognition	.37**	.71**	1.00							3.60	0.90	.76
4.Grouping	.32**	.55**	.49**	1.00						3.34	0.93	.68
5.Evaluation	.41**	.67**	.71**	.52**	1.00					3.81	0.96	.86
6.Time	.31**	.63**	.67**	.41**	.66**	1.00				4.01	0.93	.82
Personal goal												
7.Mastery-approach goal	.29**	.24**	.27**	.22**	.28**	.30**	1.00			3.54	0.81	.77
8.Mastery-avoidance goal	.24**	.17**	.18**	.13**	.19**	.19**	.61**	1.00		3.26	0.79	.71
9.Performance-approach goal	.15**	.12**	0.08	.13**	.13**	.11*	.36**	.35**	1.00	3.17	1.01	.86
10.Performance-avoidance goal	.15**	.13**	0.06	.10*	.11*	.09*	.24**	.37**	.78**	3.28	1.05	.89

*Correlation is significant at the 0.05 level (2-tailed), **Correlation is significant at the 0.01 level (2-tailed).

sufficient reliability with the lowest alpha = .71 for mastery-avoidance goals and the highest alpha = .89 for performance-avoidance goals. Sample items of these scales are 'My aim is to completely master the material presented in this class' (mastery-approach goal), and 'My goal is to perform better than the other students' (performance-approach goal). The AGQ-R was translated from English to Dutch, and then back-translated by near-native speakers.

Analyses

We used linear regression with enter method to analyse how classroom goal structures may influence personal achievement goals. For each type of personal achievement goal, we specified a regression model. All four models included the six TARGET dimensions as predictor variables, as well as three control variables, namely gender, age, and school.

Results

What kind of classroom goal structures do Dutch secondary school students experience?

Students rated the dimension time the highest ($M = 4.01$, $SD = 0.93$), thus perceiving their teacher to provide them with time to work in their own pace and taking time to answer their questions. Furthermore, this implies that, during Dutch, students perceived ownership in determining their own pace and scheduling of activities and assignments. The dimension evaluation was rated the second highest ($M = 3.81$, $SD = .96$). This dimension focuses on aspects such as the importance of putting in effort to improve oneself and considering making mistakes a part of learning. In contrast, students rated grouping lowest ($M = 3.34$, $SD = 0.93$). Grouping focuses on aspects such as being able to work in groups whenever students want to or having a teacher who emphasises group work; especially the variation in grouping is important here. Table 1 shows the descriptives and bivariate correlations for the six TARGET dimensions.

How do classroom goal structures predict students' personal goals?

Our analyses showed small to medium correlations (r = .22 – .30) between the six TARGET dimensions and mastery-approach goals. We also found small correlations (r = .13 – .24) between the TARGET dimensions and mastery-avoidance goals (see Table 1). For performance-approach and avoidance goals, we observed small correlations (r = .09 – .15) with the TARGET dimensions, except for recognition, which was not significantly related to performance goals. Even though overall the correlations were small, the correlation for the task design dimension was highest in all relationships with students' personal goals, ranging from r = .15 with both types of performance goals to r = .29 with mastery-approach goals.

Our regression analyses indicated that both the task design and the time classroom dimension were significant predictors of students' mastery-approach and mastery-avoidance goals, but not of their performance-approach and performance-avoidance goals (see Table 2). Thus, whenever students perceived the tasks in the classroom to be challenging and varied, they rated all mastery goals higher. When students perceived ownership in pace and scheduling in their classroom, they were also more likely to have mastery-oriented goals. None of the TARGET dimensions significantly predicted performance-approach and performance-avoidance goals.

Both gender and school were significant predictors of mastery-approach and avoidance goals. School, but not gender, predicted performance approach and avoidance. Gender significantly predicted mastery-approach goals, favouring the girls; that is, girls, more than boys, indicated for example, that they wanted to master the material presented in class. However, girls were also more likely than boys to avoid to perform worse than they aspired to. Being a member of school 2 or school 3, compared to being a member of school 1, positively predicted having mastery-approach and a performance-approach goals. Being a member of school 2 also predicted whether students adopted both a mastery-avoidance and a performance-avoidance approach.

Table 2 shows the findings for the analyses with School_1 as a baseline category. We also analysed whether having a different baseline category would yield different findings with regard to the regression models. Interestingly, when School_2 was set as the baseline category, all predictors remained the same in all four models except for the variable

Table 2. Regression analyses for each of the students' personal goals.

Variables	Mastery approach β (p)	Mastery avoidance β (p)	Performance approach β (p)	Performance avoidance β (p)
Gender	**.16 (.000)**	**.14 (.001)**	.08 (n.s.)	.05 (n.s.)
Age	−.04 (n.s.)	−.05 (n.s.)	−.03 (n.s.)	−.08 (n.s.)
School_2[a]	**.23 (.000)**	**.13 (.007)**	**.24 (.00)**	**.17 (.001)**
School_3	**.14 (.002)**	.05 (n.s.)	**.17 (.00)**	**.12 (.020)**
Task design	**.16 (.001)**	**.18 (.000)**	.06 (n.s.)	.09 (n.s.)
Autonomy	−.01 (n.s.)	−.02 (n.s.)	.07 (n.s.)	.12 (n.s.)
Recognition	.04 (n.s.)	.04 (n.s.)	−.09 (n.s.)	−.10 (n.s.)
Grouping	.01 (n.s.)	−.03 (n.s.)	.03 (n.s.)	−.01 (n.s.)
Evaluation	.04 (n.s.)	.03 (n.s.)	.05 (n.s.)	.03 (n.s.)
Time	**.26 (.000)**	**.15 (.02)**	.13 (n.s.)	.07 (n.s.)
R	.46	.33	.30	.25
R^2	.21	.11	.09	.07
F (df), p	12.93 (10,490),.000	6.02(10,490),.000	5.00 (10,490),.000	3.39 (10,490),.000

[a]School is dummy coded with school_1 as the baseline category.

School_3; the variable School_3 was no longer a significant predictor. Furthermore, a similar result was found when School_3 was used as the baseline category; all predictors that were significant in the analyses with the other baseline categories remained significant, except the variable School_2. School_2 was no longer a significant predictor.

Even though this was not the focus of our study, we decided to do additional analyses, to examine the differences between schools in more detail. We investigated whether these differences were significant using ANOVA. The analyses indicated significant differences between schools related to task design [$F(2,498) = 7.61$, $p = .001$], autonomy [$F(2,498) = 4.95$, $p = .007$], grouping [$F(2,498) = 5.67$, $p = .004$], time [$F(2,498) = 16.48$, $p = .000$], and in mastery-approach goals [$F(2,498) = 8.40$, $p = .000$], performance-approach goals [$F(2,498) = 12.47$, $p = .000$] and performance-avoidance goals [$F(2,498) = 5.22$, $p = .009$]. Related to mastery-avoidance goals, no significant differences between schools were found.

Table 3 shows the means and standard deviations of the variables for each of the schools. The table indicates which schools differ significantly from each other. The analyses showed that School_1 differed from the other schools on all variables, which might also explain the findings of the regression analyses when shifting the baseline school. Interestingly, students in School_1 had the highest ratings on all students' personal goals, whereas students in School_3 had the lowest ratings for all students' personal goals. There were no consistent significant differences between School_2 and School_3.

Table 3. Means and standard deviation for the schools.

Variable	School 1		School 2		School 3	
	M	SD	M	SD	M	SD
Task design [12, 23]	3.39	1.03	**3.69**	0.97	3.29	0.97
Autonomy [13]	3.52	1.06	3.58	1.05	**3.83**	0.91
Grouping [12, 13]	**3.58**	0.97	3.22	0.98	3.30	0.85
Time [12,13, 23]	3.67	1.05	3.95	0.97	**4.24**	0.75
Mastery-approach goals [13, 23]	**3.71**	0.69	3.65	0.85	3.38	0.82
Mastery-avoidance goals	**3.36**	0.70	3.31	.88	3.18	0.77
Performance-approach goals [13, 23]	**3.44**	0.86	3.31	1.05	2.94	1.01
Performance-avoidance goals [13]	**3.46**	0.87	3.39	1.07	3.12	1.10

The numbers in superscript indicate whether there are significant differences between schools; for example, for the variable Task design there are significant differences between schools 1 and 2 and between schools 2 and 3. The highest means are indicated in bold typeface.

Discussion

We investigated which kind of classroom goal structures Dutch secondary school students perceive and how these perceived goal structures influence these students' personal goals. This is important as it is assumed that in classrooms where teachers focus on learning and effort—instead of on normative standards and social comparison, students have more mastery goals (İlker & Demirhan, 2013; Lüftenegger et al., 2017). It matters that students have mastery goals because these have been found to be related to adaptive learning outcomes (e.g., Lüftenegger et al., 2012; Meece et al., 2006), whereas performance-avoidance goals have been related to more maladaptive outcomes (Elliot & Church, 1997).

Dutch classroom goal structures

Classroom goal structures can be measured by six dimensions: Task design, Autonomy, Recognition, Grouping, Evaluation, and Time. In our study, we found that students rated their classroom highest on the time dimension and lowest on the grouping dimension. Thus, students perceived that they were given opportunities to work at their own pace and that their teachers took their time to instruct students. Deemer (2004) indicated the importance of this time dimension: when students perceive that they can influence the pace and scheduling of the activities and assignments in the classroom, mastery goals would be more likely. Deemer suggested, for example, that it is important for students to have more time to finish their assignments or tasks when they are struggling and that students should be able to work at different paces. As we mentioned in the introduction, allowing for flexible scheduling and pacing is a complex competence for teachers as it requires them to be able to differentiate. Even though the Dutch Ministry of Education, Culture and Science acknowledges the importance of differentiation in schools and has supported initiatives to help secondary school teachers master this competence, teachers still find this difficult (Netherland Inspectorate of Education, 2018).

Our descriptive findings partly coincide with the findings from the Lüftenegger et al. (2017) study where students rated the evaluation dimension the highest, followed by the time dimension. The evaluation dimension has to do with teachers providing individual feedback on progress and emphasising the importance of effort and improving rather than competing. Deemer (2004) suggested that it is important to have both summative and formative feedback in the classroom. Deemer furthermore suggested that summative feedback should be comprised of various measures, varying from the more traditional tests to other types of assessment such as presentations or portfolios. Formative feedback should focus on trying to provide students and teachers with constant feedback on the teaching and learning process (i.e., it provides information on both student learning and instructional strategies). Thus, instead of focusing on whether the content of the answers is right or wrong, teachers should focus on those strategies that students may use to come to an answer. Further, all students need to be provided with enough time to respond to the teacher's questions. Both summative and formative feedback could include self-evaluation as this allows students to feel ownership of their learning. This ownership aligns with a mastery approach, in which developing one's competences is considered important.

The difference between evaluation as highest rated dimension in the Lüftenegger et al. (2017) study and time as highest dimension in our study may have to do with differences in the sample and subject under investigation. In the Lüftenegger study, younger students were involved (average age of 12 years), whereas in our study, the average age was 16 years. It might be that in classes with younger students more attention is paid to evaluation practices. Several researchers (e.g., Patrick et al., 2011) have also emphasised that perceptions of classroom goal structures may differ across classrooms or even within classrooms. Thus, it would be interesting for future investigations to include more students with different background characteristics and students from different schools. It would also be interesting to examine differences in classroom goal structures based on the school subject. For example, Lüftenegger et al. (2017) indicated that there were medium to large-sized differences between subjects in their sample.

The students in our sample scored lowest on grouping. Thus, students perceived to a relatively low extent that they could work on assignments with peers when they wanted to, or that the teacher stimulated them to collaborate with others. This finding concurs with the Lüftenegger et al. (2017) study, who also found the lowest mean for grouping. This finding is especially interesting when it comes to the question of how to enhance mastery goals in the classroom. According to Deemer (2004), grouping is important as it helps students to develop tolerance, respect, and helps students to learn how to communicate with each other and how to solve problems together—all of which are important characteristics of a mastery-oriented classroom. Deemer (2004) indicated that variations in grouping are important: composing groups that are heterogeneous (e.g., based on gender or ability) are sometimes more advantageous. For other activities, homogeneous groups, e.g., based on interest, may be more fruitful. More importantly, all students in groups need to have the opportunity to practice different roles.

Classroom goal structures and students' personal goals

Our study indicated that all TARGET dimensions were significantly correlated to mastery-approach goals and mastery-avoidance goals (albeit with smaller effect sizes for the avoidance goals). These findings are in line with the Lüftenegger et al. (2017) study, where positive correlations were found with mastery goals. Furthermore, the positive relationships between the TARGET dimensions and performance goals concur with the Lüftenegger et al. study. We also examined how and whether classroom goal structures predicted students' personal goals. Our analyses showed the importance of the task design and the time dimensions for mastery-approach and avoidance goals. None of the TARGET dimensions significantly predicted performance goals. Again, these findings are in line with the findings in the Lüftenegger et al. (2017) study; they also found that a mastery goal structure positively predicted personal mastery goals. In contrast with our study, their study did find a positive relationship between a TARGET goal structure and performance goals, more specifically avoidance goals. It might be that in our sample student background characteristics were more important for explaining differences in variance in students' personal goals; that is, more important than the classroom goal structures.

We found an interesting result after having added control variables to the regression models. Gender and school were also important predictors in our study. Firstly, girls rated mastery-approach higher which might be explained by how teachers treat students. Butler (2012) indicated, for example, that teachers pay more attention to ability and attainment when interacting with boys, whereas when interacting with girls, they appear to pay more attention to effort and improvement.

Secondly, school was an important predictor for both mastery and avoidance approach. From an achievement goal perspective, a possible explanation for this finding may have to do with the message the school is conveying to its teachers and students; that is, similar to students' personal goals and classroom goal structures, schools can be either focused on mastery or performance. It would be fruitful if future research examines the school goal structures (see for example, Cho & Shim, 2013 who suggested that teachers' personal goals may vary depending on the goals the school conveys). Although it was not in our research questions, we decided to examine the variable 'school' in more detail. Our

findings revealed that there were differences between schools. Unfortunately, as school was only included as a control variable, we did not have any detailed information on the schools that could potentially explain these observed differences. In future research, it seems important to include school level variables that could possibly explain differences in students' personal goals.

We propose some options here, as an extensive discussion on this topic would be beyond the aim of this paper. As such, we do not believe these options are exhaustive. The extent to which a vision on teaching and learning, as well as on motivating students, is shared at the school level has been shown to impact learners (cf. Hammerness, 2006; Timperley, 2005). In line with this, the extent to which teachers share their knowledge, experiences, and ideas, i.e., create a dense social network and collaboration, as well as the extent to which this is facilitated by school leaders may influence the classroom activities and in turn students' personal goals (Brown et al., 2016; Harris & Jones, 2017).

Limitations, future research and implications

Our study has some limitations and raises new questions. These are related to the sample and subject included in our study, to the conceptualisation and measurement of classroom goal structures, and the analyses. Our study included a selection of students in classes of three schools in the Netherlands. As we discussed above, there may be different perceived classroom goal structures within and between classes. Students, teachers, and schools may all play a role in explaining these differences in variance in mastery goals. It would therefore be interesting to include a larger sample of schools to be able to compare students based on characteristics such as location, number of students per classroom and size of the school, and background of the students. Related to this, the students in our sample completed the questionnaire focusing on the school subject Dutch. Even though it is important to focus on a subject domain such as Dutch, as it is a mandatory school subject for students in all grades, these perceptions cannot be generalised to all school subjects. It would be interesting to collect data on different subject domains to find out whether students perceive different classroom goal structures based on the subject under study.

Our study focused on students' personal goals from a 2 × 2 model where the approach-avoidance distinction was applied to both the mastery and performance goals. However, we examined the classroom goal structures from a dichotomous model, where a mastery-goal oriented classroom was distinguished from a performance-goal oriented classroom. As Morgan and Kingston (2010) already indicated, there may also be classrooms that do not score high on either type of goal ('neutral climate'). Besides that, it would also be valuable to investigate a 2 × 2 model for classroom goal structures as Peng et al. (2018) did; this would allow the possibility for examining the difference between approach and avoidance classrooms, next to mastery-oriented and performance-oriented classrooms.

Finally, our data concerned the perspective of students, which adds to previous studies examining classroom goal structures with quantitative data from teachers or from classroom observations. It would be meaningful to be able to triangulate these data and thus develop a study in which both quantitative and qualitative data are combined with perspectives from both students and teachers. Related to this, Raudenbush and Bryk (2002) underline the nested nature of students' perceptions. Although our sample size

was too small to employ multilevel analysis, our findings do reveal that school level factors should be included in future studies that investigate factors influencing goal orientations.

The need for more insight in what actually happens in the classroom concerning classroom goal structures and students' personal goals is also very well illustrated by the following quote from one of our respondents:

> I want to perform well, for myself. This is because I think there is too much pressure: one compares oneself with others often, at least I do, when it comes to performing and obtained grades. It is not that I strive for excellence, but it simply feels good to have a sufficient grade just like the rest of the class (Quote from a respondent in our sample)

The quote illustrates the dilemma students face when they think about performance and mastery goals. Even though students might be inclined towards mastery goals, their teacher and/or classmates may influence them in such a way that they fall back on adopting performance goals.

This quote also suggests, next to the importance of gaining more insight into the underlying processes, the relevance of creating awareness of the importance of mastery goals and the potentially detrimental effects of a performance-oriented classroom structure. Creating awareness should concern all stakeholders: the students who may experience different classroom goal structures, the teachers who may have different personal goals or may treat students differently, and the schools that may have different school goals (that may either be performance- or mastery-oriented). Next to creating awareness, it is important to give teachers more practical guidelines on how they can design their classrooms in such a way that a mastery-goal orientation is enhanced (as we did in the previous sections).

Conclusion

Designing challenging and varied tasks as well as having students determine their own pace and schedule their own task and activities significantly predicted students' mastery-goal orientation. We found that both student background characteristics and context variables were important; being female predicted a mastery goal orientation, and belonging to a certain school predicted both mastery and performance goal orientation. With our study, we contribute to the existing knowledge base on both personal achievement goals and classroom goal structures. We provide more insight into how a set of different but complementary instructional dimensions are related to goals that focus on understanding or competence, thus informing teachers and educational developers on how they might design classroom and teaching practices that help students to focus on developing their own competence. Additionally, by including students' perceptions of the classroom goal structure, we offer teachers insight into the impact of their teaching, as well as provide them with recommendations in creating classrooms focused on mastery goals. This, in the end, may hopefully lead to more mastery-goal oriented students who engage in learning with the purpose of developing their competence.

Disclosure statement

No potential conflict of interest was reported by the authors.

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