The relationship between teachers' work motivation and classroom goal orientation

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Abstract

We investigated the relationship between teachers' work motivation and their self-reported endorsement of mastery goals - i.e. goals focusing on learning and effort-, instead of performance goals - i.e. goals focusing on competition-, in the classroom. 154 secondary school teachers in the Netherlands completed a questionnaire on background characteristics, work motivation, and classroom goal structures. We found that teachers with higher levels of autonomous motivation, scored high on their self-reported endorsement of mastery goals. Controlled motivation was a significant predictor of performance goals, but not of mastery goals. In contrast, autonomous motivation was found to be a small yet significant predictor of mastery goals. Additional analyses also indicated the importance of background characteristics such as gender, teaching experience in years and educational track. Our study shows that teachers' motivation for their work significantly relates to the goals they reported for their pupils in their classroom.

Keywords: teacher work motivation; classroom goal structures; self-determination theory; achievement goal theory

1 Introduction

Research has shown that a focus on mastery goals, i.e. a focus on understanding material, in secondary school classrooms is beneficial for eliciting adaptive learning and learning outcomes (Deemer, 2004; Rolland, 2012) and supports pupils' motivation (Ames, 1992). Considering the low levels of motivation among pupils in the Netherlands (Inspectie van het Onderwijs, 2018), taking a closer look at the goal orientation of Dutch teachers' classrooms seems relevant and timely.

Although international studies have indicated that teachers perceive their classrooms to be mastery goal-oriented (e.g., Cho & Shimm, 2013), it remains unclear whether these perceptions are in line with actual practice. Research in higher education has shown, for example, that the actual impact of teaching often is different from what a teacher or instructor imagined it to be (Clift & Brady, 2005). And the same might be the case for classroom goals. To create a mastery-goal oriented classroom goal structure, Ames (1992) indicated that strategies such as "supporting development and use of self-management and monitoring skills" and "designing tasks for novelty, variety, diversity, and pupil interest" are important. These strategies are considered the more complex competences, and research in Europe has shown, based on observational data, that teachers have difficulties with mastering these competencies (van de Grift, 2014). In the Netherlands, less than sixty percent of the secondary school teachers succeed in involving their pupils in their class by activating instruction and less than 50% of the teachers succeed in differentiating based on pupils' needs. An even lower percentage of secondary school teachers succeeds in teaching pupils learning strategies (van de Grift, 2014). Thus, these figures show that European teachers have difficulties with the more complex teaching competencies which are necessary for creating a mastery goal oriented classroom. This, as well, contrasts with research presenting teachers' own perception of their classroom being mastery oriented (e.g., Cho & Shimm, 2013). Yet, there is little empirical information on how Dutch secondary school teachers in particular perceive their classroom goal structures.

In addition to uncertainty around how these teachers perceive their classroom goal structures, we also know little about what personal features of teachers might influence

these structures. Previous research among student teachers in Germany shows that motives for choosing teacher education significantly influences these students' achievement goals, which in its turn influenced their instructional practice (Paulick, Retelsdorf, & Möller, 2013). Studies have furthermore shown that motivation is an important factor in the work, life, and identity of teachers (e.g., Canrinus, Helms-Lorenz, Beijaard, Buitink, & Hofman, 2012; Day, Stobart, Sammons, & Kington, 2006). Previously, we also observed a significant relationship between motivation and commitment to the profession (Bruinsma & Jansen, 2010; Canrinus et al. 2012; Fokkens-Bruinsma & Canrinus, 2012; 2014), and a significant relationship between motivation and self-efficacy beliefs (Bruinsma & Jansen, 2010; Fokkens-Bruinsma & Canrinus, 2014). Possibly, teachers' current motivation for their work is related to their perceptions of classroom goals as well. Gaining understanding about this possible relationship may help to find ways to increase teachers' ability to create more mastery oriented classroom goal structures.

Thus, we will investigate Dutch secondary school teachers' perceptions of their classroom goal structure and the relationship with their current motivation. To do so, we combine two closely related motivational perspectives: the achievement goal theory (AGT, see for example Elliott & Church, 1997), which is one of the most important theories to understand achievement motivation in schools, and the self-determination theory (SDT, Deci & Ryan, 2000), which describes motivation in terms of the choices individuals make and the goals that individuals pursue. Deci and Ryan (2000, p.260), stated that there is "general convergence of evidence from achievement goal theories and [self-determination theory] concerning the optimal design of learning environments". Previous studies have indeed shown, combining these theories, that classroom goal structures influence the extent of pupils' self-determined motivation (e.g., Peng, Sherng, Chen, & Lin, 2013; Standage, Duda, & Ntoumanis, 2003). We, on the other hand, aim to investigate a reverse relationship focusing on the possible relationship that teachers' self-determined motivation for the teaching profession might have with the classroom goal structures they employ. It is not only important to investigate what goals people pursue (i.e. mastery or performance goals), it is also important to understand why these are pursued (Deci & Ryan, 2000).

Goals are easier to pursue or aim for when they align with personal beliefs and values (Sheldon & Elliot, 1999). Thus a person's individual characteristics are important to take into account when investigating the goals that are in focus. Urdan and Mestas (2006) also showed, based on interviews with high-school seniors, that these students had a variety of reasons to pursue their achievement goals. Thus personal motives seem to impact the goals that that are placed in the spotlight. Building on these findings, we assume that teachers' work motivation is related to the classroom goal structures they create. More specifically, we believe that teachers who score higher on autonomous motivation, will more likely be able to create a mastery goal oriented classroom structure, since they are more likely to adopt intrinsic goals and show more autonomy supportive behaviour towards their pupils (Pelletier, Séguin-Lévesque & Legault, 2002). This hypothesis is also based on the work by Ciani, Sheldon, Hilpert and Easter (2011), who examined the relation between personal achievement goals and motivation to do well in class (in terms of SDT) for preservice teachers. Their study showed relationships between self-determined class motivation and mastery approach and avoidance goals.

Reversing the relationship between the theories as previously studied, investigating self-determined motivation as an influencing factor instead of an outcome of classroom goals, and focusing on teachers' motivations and perceptions of their own classrooms instead of focusing on pupils, thus adds new perspectives to the field of research into motivation in education. Below, we first discuss the achievement goal theory and related to that classroom goal structures. This is followed by a discussion on teacher work motivation from the self-determination perspective.

1.1 Achievement goal theory

Traditionally, achievement goal theory characterized goal orientations using two constructs: mastery goal orientation and performance goal orientation (Ames, 1992; Deemer, 2004; Meece, Anderman & Anderman, 2006). Pupils with a mastery goal orientation focus on engaging in achievement with the purpose of developing their competence, whereas pupils with a performance goal orientation focus on demonstrating 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 variable (first revision, see Elliot & Church, 1997; Harackiewicz, Barron, Pintrich, Elliot & Thrash, 2002), and a 2×2 model including the approach-avoidance distinction in the mastery goal construct (second revision; Elliott, 1999). In these models, approach goals focus on acquiring positive outcomes and avoidance goals focus on avoiding negative outcomes. More recent research, shows that individual goals that pupils have for learning may differ from individual goals that teachers have for teaching. That is, teaching goals or goals for teaching concern interpersonal relationships, whereas learning goals are more personal goals. Researchers thus extended the theory even further with, among others, social goals and the inclusion of relational goals for teaching (see e.g. Butler, 2012; Horst, Finney & Barron, 2007). These authors emphasise the importance of social/relational goals for the teaching profession. When looking at the classroom goal structures level, which is discussed in section 1.2, we see that the development towards measuring a 2×2 model and including social goals has not yet been substantiated (Wolters, Fan & Daugherty, 2010), though some authors have developed and tested measures to do so (see for example Retelsdorf, Butler, Streblow & Schiefele, 2010). Because of the limited empirical substantiation, the present study will characterize the classroom goal structures in terms of either mastery or performance goal structures.

Studies have shown that a mastery goal orientation is related to adaptive learning behaviours, 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 (e.g., Meece, Anderman & Anderman, 2006). In research on the performance goal orientation, *avoidance* goals have been related to less adaptive beliefs about learning (e.g. Elliott & Church, 1997); *approach* goals on the other hand have been related to positive effects on achievement (e.g. Wolters, 2004).

1.2 Classroom goal structures

Research on classroom goal structures started from the work by Ames (1992) who investigated what type of classroom goal structures were needed for pupils to focus on mastery or performance goals. This line of research assumes that the type of goals that are set in the classroom (i.e. classroom goals) influences the type of goals pupils set for themselves (i.e. pupils' goals, Ilker & Demirhan, 2013; Rolland, 2012) and that these classroom goal structures reflect the teachers' goal orientations (teachers' goals, Ames, 1992).

Two different messages may be conveyed to the pupils in the classroom depending on whether the classroom is characterised by mastery or performance goals. In a classroom with a mastery goal structure, the focus is on learning and effort (Ames, 1992). Pupils and teachers focus on engaging in activities with the purpose of developing one's competences. Pupils find satisfaction from their interest in the task and the challenge of the task. Teachers choose content and exercises giving optimal challenges to every pupil (Skaalvik & Skaalvik, 2015). Furthermore, in a mastery goal-oriented classroom pupils use their past performance as a standard for judging task success. Research has shown that mastery goals in the classroom are positively associated with positive outcomes such as pupils' interest, positive affect, effort, persistence, more cognitive learning strategy use and more metacognitive learning strategies use, as well as with academic performance (Ames, 1992; Church, Elliot & Gable, 2001; Meece et al., 2006; Patrick & Ryan, 2011; Wolters, 2004). Urdan and Midgley (2003) showed a

decrease in intrinsic motivation, in positive affect, and in achievement when the perceptions of mastery goal structures in the classroom declined. Kaplan, Gheen and Midgley (2002) finally indicated that promoting mastery goals in the classroom was related to lower reports of disruptive behaviour.

Classrooms with a performance goal structure, on the other hand, focus on demonstrating one's ability or avoiding the demonstration of a lack of ability. Success is determined based on normative standards and defined by demonstrating higher ability than others (Ames, 1992). Here, pupils find satisfaction in doing better than others and meeting or surpassing normative performance standards (Deemer, 2004; Meece et al., 2006). This type of classroom is found to be related to maladaptive educational functioning such as avoidance of help-seeking and self-handicapping (Huang, 2012; Patrick & Ryan, 2011). Wolters (2004) found positive associations with procrastination, cognitive and metacognitive strategies, and a negative relationship with achievement. Kaplan et al. (2002) found both performance approach and performance avoidance goals to be related to higher reports of disruptive behaviour.

So how can teachers create classroom goal structures that focus on mastery? Deemer (2004) used the achievement goal theory framework and the TARGET framework by Ames (1992) and stated that classroom goal structures can be manipulated in such a way that can help pupils to convey the mastery-goal approach, namely by focusing on task design (T), distribution of authority (A), recognition of pupils (R), grouping arrangement (G), evaluation practices (E) and time allocation (T) (see e.g. Lüftenegger, Tran, Bardach, Schober & Spiel (2017) who developed a questionnaire, the Goal Structure Questionnaire, to measure pupils' perceptions of a mastery goal structure based on the TARGET dimensions).

1.3 Teachers' work motivation

We describe teachers' work motivation in terms of the self-determination theory (SDT, Ryan & Deci, 2000). The SDT distinguishes different types of motivation, placed on a continuum ranging from a more *controlled* to a more *autonomous* form of motivation (Deci & Ryan, 2000; Gagné & Deci, 2005; Niemiec & Ryan, 2009). Autonomous motivation involves acting with a sense of volition experiencing choice, whereas controlled motivation involves acting with a sense of pressure (see www.selfdeterminationtheory.com for more background information and an elaborate description of the SDT). Research has shown that autonomous motivation is associated with higher psychological well-being, more determination and will, better cognitive processing, higher job satisfaction, and commitment to the organisation (e.g. Niemiec & Ryan, 2009; Roth, Assor, Kanat-Maymon & Kaplan, 2007; Van den Broeck, Vansteenkiste, De Witte, Lens & Andriessen, 2009).

In this study, we assume that a higher level of autonomous motivation is related to a more mastery goal oriented classroom structure. The more autonomous forms of motivation teachers perceive towards their work is related to more autonomy support for their pupils (Pelletier et al., 2002). Furthermore, different types of motivation – autonomous and controlled motivation – relate differently to intrinsic goals and extrinsic goals (Vansteenkiste, Matos, Lens & Soenens, 2007). Where intrinsic goals are related to a mastery goal orientation, extrinsic goals are associated with more performance oriented goals (see for example Malmberg, 2006). Malmberg (2006) found a positive significant relationship between teacher intrinsic motivation and a personal mastery goal orientation of teachers. Since personal goal orientation is positively correlated with communicated classroom goal orientation, this substantiates our expectation regarding the relationship between work motivation and classroom goal structures (see also Cho & Shim, 2013; Retelsdorf et al., 2010).

As was described in the previous sections, it is important to enhance mastery goals in secondary education as it has been found beneficial to learning and learning outcomes. However, teachers have difficulties with complex competences, such as differentiation, and teaching pupils learning strategies, associated with creating a mastery goal struc-

ture. Despite this fact, there is little information about Dutch teachers' perceptions of their classroom structures. Next to this, it is important to find out how we can influence whether and how Dutch teachers create classroom goal structures, as we believe that teachers' motivation is an essential factor in pupils' learning processes. The present study thus investigates how teacher motivation is related to a teacher's classroom goal structure that is either mastery or performance goal oriented. Though many studies have examined classroom goal structures and teacher motivation independently, more research is needed that focuses on both aspects. We have not come across research combining a self-determination perspective on experienced teachers' motivation and how this relates to how they structure their classroom.

Moreover, research focusing on differences regarding classroom goal structures based on gender, teaching experience in years, and educational track is scarce. As we want to understand to which degree we are able to generalize our findings, and as Huang (2012) in their meta-analysis on achievement goals also emphasised the importance of examining gender in relation to achievement goals, we want to investigate whether our potential findings are similar across these groups. Malmberg (2006) observed differences between genders, with male teachers setting higher levels of performance goals and female teachers setting higher levels of mastery goals. Yet, Wolters and Daugherty (2007) did not find an effect of gender on teachers' classroom goal structure, similar to Butler (2012) who extended the achievement goal theory with relational goals and did not find an effect of teacher gender on these goals. However, Wolters and Dougherty (2007) did observe an effect of academic level. They found that teachers in elementary schools reported higher levels of mastery structure and lower levels of performance structure than middle and high school teachers. Although we focus on differences between educational tracks within one academic level, these previous findings might give us an indication of what to expect in the present study. The following research questions have been specified:

1. Which classroom goal structures do Dutch secondary school teachers state they create?
2. How is teacher motivation (autonomous or controlled motivation) related to classroom goal structures?
3. To what extent are there differences in motivation and classroom goal structures based on gender, teaching experience in years, and pupils' educational tracks?

2 Method

2.1 Participants and design

Data were collected through a digital questionnaire. This questionnaire was distributed to a convenience sample of 300 teachers in five high schools in the Netherlands. The third and fourth authors worked in some of these schools, thus data collection in these schools was convenient. Participants were either sent an e-mail directly in which a link to the questionnaire was included, or the link was posted in the weekly bulletin, which every teacher in the schools received. Participation was voluntarily. In total, 63% of the teachers completed the questionnaire, of these, 35 cases were removed because of missing data. Thus, 154 teachers (71 males, 80 females; M_{age} = 42 years, SD_{age} = 12.5, $M_{experience}$ = 14 years, $SD_{experience}$ = 11) in a variety of school subjects and educational tracks were included in the analysis.

2.2 Variables and instruments

Data were collected on teachers' work motivation and their perceptions on what goals they set in their classrooms. Furthermore, data on teachers' background was included. These background variables included teachers' gender, teaching experience in years, and educational track. Teachers were asked in which secondary educational track they predominantly taught: preparatory vocational secondary education (Dutch abbreviation: VMBO, 58 teachers), general secondary education (Dutch abbreviation: HAVO, 37 teachers) and university preparatory secondary education (Dutch abbreviation: VWO, 56 teachers). Teacher work motivation was

measured using a 16-item scale developed by Roth et al. (2007), based on the conceptualization and measurement developed by Ryan and Connell (1989). In this instrument, autonomous motivation is measured by items such as 'When I invest effort in my work as a teacher, I do so because it is important to me to keep up with innovations in teaching' and 'When I devote time to individual talks with pupils, I do so because I like being in touch with children and adolescents' (eight items, α = .78, see Table 1). Similarly, controlled motivation is measured by items such as 'When I invest effort in my work as a teacher, I do because I don't want the principal to follow my work too closely' and 'When I devote time to individual talks with pupils, I do so because it makes me feel proud to do this' (eight items, α = .67, see Table 1). Teachers indicated the extent to which they agree with each item on a 7-point Likert scale (*1 = strongly disagree, 7 = strongly agree*).

2.3 Data analysis

The first research question was answered using descriptive statistics. We analysed question two, regarding the relationship between teacher motivation and classroom goal structures, by first examining the zero-order correlation. Second, we used linear regression analyses, with method enter, to gain more insight in the relation between teacher work motivation and each of the classroom goal structures. Furthermore, we analysed two models, where gender, educational track, and teaching experience in years were added. The third research question was answered using a t-test (for gender) and ANOVA (for educational track and years of teaching experience).

3 Results

3.1 Which classroom goal structures do Dutch secondary school teachers create and what type of motivation do they have?

Our findings show that teachers express more autonomous motivation (M = 5.85) than controlled motivation (M = 3.79, t = 30.2, df = 160, p = .000 see Table 1). That is, these teachers indicated that they chose to work as a teacher for example because they liked being in touch with children and adolescents. Furthermore, teachers scored higher on self-reported mastery goal structures (M = 4.74) than on performance goals structures (M = 3.74, t = 8.39, df = 153, p = .000). Bivariate correlations show that a mastery-oriented goal structure was related to autonomous work motivation (r = .22) and that a performance oriented goal structure was positively related to controlled work motivation (r = .27).

3.2 How is teacher motivation related to classroom goal structures?

Linear regression analyses were used to analyse the relation between teacher motivation, and self-reported classroom goal structures. We specified two models, one in which classroom mastery goal structure was the outcome variable, and one in which performance goal structure was the outcome variable; both models included autonomous and controlled motivation as predictor variables (see Table 2a). Next to these models, we examined two models in which the background variables, gender, teaching experience in number of years, and educational level were included besides autonomous and controlled motivation as predictor variables (see Table 2b). Table 2a indicates the standardised coefficients for

Table 1
Variables, means, standard deviation, reliability and correlations

Variable	*M*	*SD*	*α*	Controlled Motivation	MG	PG
Autonomous Motivation	5.86	0.62	.78	.36**	.22**	.12
Controlled Motivation	3.79	0.88	.68		.09	.27**
Mastery Goals	4.74	1.06	.66			.03
Performance Goals	3.74	1.07	.71			

*** Correlation is significant at the 0.01 level (2-tailed), MG = mastery goal orientation, PG = performance goal orientation*

the regression analyses. The table shows that that controlled motivation (β = .26, t = 3.09, p = .002) was a significant predictor of performance goals, but was not included in the model for mastery goal structure. In contrast, autonomous motivation was only a significant predictor of classroom mastery goals (β = .22, t = 2.52, p = .013). It should be noted, though, that the amount of explained variance was rather low for both models (7% for the performance goal structure model and 5% for the mastery goal structure model)

Thus, teachers who were autonomously motivated perceived that they used mastery approaches in their classroom (e.g., giving a wide range of assignments that are matched to pupils' needs and skill level). Teachers scoring high on controlled motivation perceived that they set performance goals in their classroom (e.g., give special privileges to pupils who do the best work, encourage pupils to compete with each other).

Table 2a
Regression analysis for variables predicting performance goals (model 1) and mastery goals (model 2)

Variables	Performance goals: β (p)	Mastery goals: β (p)
Autonomous motivation	.03 (.725)	**.22 (.013)**
Controlled motivation	**.26 (.002)**	.02 (.856)
R	.27	.22
R^2	.07	.05
F (df), p	6.02 (2,151)	3.88 (2, 151)
p	.003	.030

The table shows standardised regression coefficients; significant coefficients are indicated in bold type.

Table 2b shows the standardised coefficients for the regression models for mastery and performance goal structure that included background characteristics, next to teacher motivation. Interestingly, for mastery goals only educational track is a significant negative predictor (β = -.23, t = -2.63, p = .01). That is, the lower the educational track the more teachers perceived they used mastery approaches in their classroom. In contrast with the previous model for mastery goals, in this model autonomous motivation is no longer a significant predictor of a mastery goal structure.

The findings are somewhat different for the model with performance goal structure as outcome variable. Here, gender (β = -.20, t = -2.47 , p = .02), educational track (β = .23, t = 2.84, p = .005), experience in years (β = -.16, t = -2.05 , p = .042) and controlled motivation (β = .30, t = 3.52 , p = .001) are found to be significant predictors of performance goals. Male teachers, teachers in the higher educational tracks, teachers with less teaching experience in years and teachers who are more controlled motivated perceived that they set performance goals in their classroom.

Table 2b
Regression analysis for variables predicting performance goals (model 1) and mastery goals (model 2), including background characteristics

Variables	Performance goals: β (p)	Mastery goals: β (p)
Gender	**-.20 (.020)**	-.05 (.546)
Educational track	**.23 (.005)**	**-.23 (.010)**
Experience in years	**-.16 (.042)**	-.01 (.282)
Autonomous motivation	.09 (.310)	.16 (.086)
Controlled motivation	**.30 (.001)**	-.03 (.748)
R	.43	.31
R^2	.18	.10
F (df), p	6.23 (5,138)	2.90 (5, 138)
p	.000	.020

The table shows standardised regression coefficients; significant coefficients are indicated in bold type.

3.3 Differences in gender, teaching experience in years, and educational track

Our analyses indicated significant gender and track related differences (see Table 3). There were no significant differences related to teaching experience in years. Regarding teacher work motivation, female teachers scored significantly higher on autonomous work motivation than male teachers (M_{female} = 5.99, SD_{female} = .56, M_{male} = 5.71, SD_{male} = .67, t = -2.79, df = 152, p = .006). Thus, female

teachers, more often than male teachers, indicated that they invested effort in their work as teachers because they for example enjoyed creating connections with people. Regarding the perceptions of classroom goals, we found that male teachers reported to endorse performance goals more often than female teachers (M_{male} = 3.93, SD_{male} = 1.08, M_{female} = 3.58, SD_{female} = 1.04, t = 2.06, df = 152, p = .04). That is, male teachers indicated more often than female teachers that they for example used strategies such as giving special privileges to pupils who do the best work. There were no significant gender-related differences in mastery goals or in controlled motivation.

When investigating the differences between the tracks teachers teach in, we found differences in autonomous motivation, controlled motivation, and in mastery goal structures. Teachers in the preparatory vocational track reported that they established mastery goals most often, and scored highest on both autonomous work motivation and controlled work motivation. Teachers in the university preparatory and the general secondary education tracks, on the other hand, reported to enact mastery goals the least in their classrooms, were the least autonomously motivated, and had the lowest levels of controlled teacher motivation (see Table 3).

We investigated whether these difference were significant using ANOVA. The results indicated significant differences for all variables but performance goals. For teachers' work motivation [F(2,148) = 4.92, p = .009], post hoc comparisons indicated that the mean score for the preparatory vocational track(M = 6.01, SD = .53) and for the general secondary education track (M = 5.93, SD = .62) were significantly higher than that of the preparatory university track (M = 5.65, SD = .67). Similarly, we found a significant difference of track for controlled work motivation [F(2,148) = 5.15, p = .007]. Here, we found that the mean scores for the preparatory vocational track (M = 4.01, SD = .85) and for the general secondary education (M = 3.88, SD = .92) were higher than that of the preparatory university track (M = 3.50, SD = .82). Lastly, we observed differences for mastery goals [F(2,148) = 6.35, p = .02] with the preparatory vocational track (M = 4.83, SD = .90) and the general secondary education track (M = 4.80, SD = .85) being significantly higher than the preparatory university track (M = 4.33, SD = .99).

4 Conclusion and discussion

4.1 Discussion

This study focuses on the relationship between teachers' work motivation and their self-reported classroom goal structures. Our analyses

Table 3.
Gender and track differences in teacher motivation and classroom goal structures

Variable	Gender differences			Educational track differences			
	Male	Female	t-test	Lowest	Middle	Highest	ANOVA
Teacher motivation	*M* (sd)	*M* (sd)	t, df, p	*M* (sd)	*M* (sd)	*M* (sd)	*F,(df),p*
Autonomous motivation	5.71 (.67)	5.99 (.56)	-2.79, 152, .006	6.01 (.53)	5.93 (.63)	5.65 (.67)	4.92 (2, 148), .009
Controlled motivation	3.76 (.98)	3.82 (.88)	-.440, 142, .663	4.01 (.85)	3.88 (.92)	3.50 (.82)	5.15 (2, 148), .007
Classroom goal structure							
MG	4.70 (1.06)	4.78 (1.05)	-.480, 152, .630	4.97 (.94)	4.99 (1.02)	4.38 (1.07)	6.35 (2, 148), .020
PG	3.93 (1.08)	3.58 (1.04)	2.06, 152, .041	3.60 (1.14)	3.63 (.96)	3.95 (1.05)	1.85 (2, 148), .160

Note: MG = Mastery Goals, PG = Performance Goals

indicated that the teachers in our sample reported more autonomous motivation than controlled motivation and more mastery approaches than performance approaches. This coincides with previous studies (e.g., Cho & Shim, 2013), in which teachers perceived that they set more mastery goals in their classrooms than performance goals. We would deem this a positive outcome as research shows that a mastery goal orientation is often associated with higher long-term academic interest and engagement of pupils (Belenky & Nokes-Malach, 2012; Church et al. 2001). Ciani, Summers and Easter (2008) underline the importance of focusing on mastery goals. They indicated that, when it comes to educational reform, it is important to focus on mastery goals at the pupil level, the classroom level, and the school level. As such, they stress the importance of gaining more insight in the variables that help teachers to create a mastery goal structure which is assumed to enhance a mastery-goal orientation in pupils.

Focusing on the relationship between motivation and classroom structures we noticed a small yet significant correlation between autonomous motivation and a mastery approach and between controlled motivation and a performance approach. This implies that teachers who were more autonomously motivated for their teaching (for example when they stated that they liked working with children) reported that they endorsed mastery goals more often in their classroom. Furthermore, teachers who scored higher on controlled motivation (e.g., when they indicated that they invested effort because otherwise they would feel guilty) more often reported that they endorsed performance goals in their classrooms. These findings are in line with the findings from Ciani et al. (2011) who observed similar results in a sample of preservice teachers: their study showed that there was a strong relationship between self-determined (autonomous) motivation and a mastery approach. These findings also show that teachers should be able and need to develop their autonomous motivation. Other researchers underline this claim. Benita, Roth and Deci (2014), for example, indicated that mastery goals were more adaptive when college students experienced an autonomous context. To enhance teachers' autonomous motivation, it is important to focus on teachers' basic needs for feeling competent - for example by giving teachers time to develop professionally - enhancing their sense of relatedness - for example feeling appreciated and accepted by the team leader or school director, colleagues and their pupils -, and feeling autonomous in terms of feeling in control of their own behaviours (related to the profession and related to professional development; see also Roth et al. 2007). Our findings thus underline the importance of creating a school climate where teachers feel autonomously motivated to create more effective, i.e. mastery goal oriented, classroom goal structures. Both teachers and schools can play a role here. Teachers need to become aware of the question of how they can enhance their autonomous motivation. Schools can focus on this question as well, but could also investigate whether their school enhances a (school) mastery goal structure.

The regression analyses that included teachers' background characteristics showed some interesting additional findings. For mastery goal structures, only educational track was found to be a significant predictor, while autonomous motivation was no longer found to be a significant predictor. Furthermore, for performance goal structures, gender, educational track, teaching experience in years were found to be significant predictors next to controlled motivation. These findings which point to the importance of track, gender and teaching experience in years were supported by the findings for our third research question. Here, we also found that male teachers reported that they set performance goal structures more often than their female colleagues. These findings contrast the findings by Wolters and Daugherty (2007), but are in line with the findings of Malmberg (2006), who found that male preservice teachers set higher levels of performance goals. Contrary to the findings of Malmberg (2006), who found that female teachers tended to set higher levels of mastery goals, we did not observe a difference between males and females with regard to

creating a mastery oriented classroom. The second difference we observed between genders was related to their motivation; female teachers were more autonomously motivated than male teachers. As was mentioned in the introduction, Huang (2012), in a meta-analysis on achievement goals, calls for more research into gender differences. We repeat this call and believe that further study of gender effects on goal structure might be insightful to find out more about their work motivation and the question of why male teachers set performance goal structures in their classrooms more often than female teachers.

In addition to investigating gender differences, we also studied potential differences between the tracks where our participating teachers taught. In line with the regression analyses, we found that teachers who mostly taught classes in the preparatory vocational track were more likely to report that they use mastery approaches in their classes compared to teachers who taught in the university preparatory track. These differences might be explained by the nature of the pupils and type of teaching. It might be that pupils in the preparatory vocational track are more often assessed on personal growth whereas in the university preparatory tracks grades are important to both pupils and teachers. Next to the difference in mastery goals, we found that teachers in the preparatory vocational track scored highest on both autonomous motivation and controlled work motivation. From our experience in the field we recognize this, i.e. teachers feeling highly autonomously and controlled motivated. Research suggests that the motivational strategies teachers employ in their classroom are related to teachers' perceptions of their students' ability, background, and behaviour (Hornstra, Manfield, van der Veen, Peetsma, & Volman, 2015). These perceptions might be more influential in the preparatory vocational track as this is a highly diverse student population (Van den Berg, Heyma, Mulder, Brekelmans & Voncken, 2017), and influence teachers' motivation for their work. However, this claim is speculative and more research is needed to understand this level of teachers' work motivation in this specific track.

More research is needed here into the reasons why these teachers feel both autonomously and controlled motivated. And this finding fits with the direction several other researchers in this field are moving in. Vansteenkiste, Sierens, Soenens, Luyckx, and Lens (2009), for example, used what is called a person-oriented approach, where one focuses on all motivational factors of an individual instead of on relations between isolated factors. In such an approach, the combination of relatively high ratings of both autonomous and controlled motivation would not come as a surprise and this approach may be an interesting avenue for further research. For example, it would be interesting to find out whether a combination of a high rating on autonomous and controlled motivation would be more beneficial to creating a classroom goal structure, compared to a high rating on autonomous motivation and a low rating of controlled motivation.

4.2 Limitations and future investigation

Our findings should, nevertheless be perceived in light of its limitations. This was a correlational study, and data and the limitations mainly originate from the sample and the instrument used to collect our data. We collected data from a convenience sample, which may have had consequences for the representativeness of the sample. Thus it would be worthwhile to further investigate whether these findings are similar when including teachers from both rural and city schools as well as teachers from large schools and small village schools. Furthermore, 63 percent of the teachers completed the questionnaire. It may have well been the case that the non-responders had a different work motivation or classroom goal structure than the responding teachers. Still, a response rate of 63 percent on an online survey is quite positive and above the 60% minimum which most biomedical journals work with as a rule (Livingston & Wislar, 2012). The challenge with the non-responders lies in the question of how to motivate those teachers who initially appear to be less motivated.

Regarding the instrument we used, we noted that the reliability for mastery goal

structure was moderate. It is important to find out what exactly explains the moderate size of the alpha and how we can increase the reliability of the instrument. Similarly, the question rises how we can optimally capture the construct of mastery goal structures. We assessed the classroom goal structure using a teacher questionnaire, thus asking teachers about their perceptions of the structure of the classroom. Even though other research has shown that the intended classroom goal structure correlates positively and significantly with the perceived classroom goal structure by pupils (e.g. Butler 2012), we cannot guarantee that this is also the case here. Similarly, studies comparing teachers' self-report data to pupil perceptions and external observation also observed differences in ratings of teaching behaviours (Den Brok, Bergen & Brekelmans, 2006; Lawrenz, Huffman & Robey 2003; Van der Schaaf, Stokking & Verloop, 2008). In higher education, research has shown that the actual impact of teaching often differs from the impact the teachers intended (Clift & Brady, 2005). Thus, our findings are limited to teachers' perceptions of the classroom goal structure and cannot be generalized to make claims or statements regarding the factual classroom goal structure as experienced by students or in terms of actual classroom behaviour. We therefore encourage researchers to replicate this study and triangulate teachers' perceptions with pupil perspectives of the classroom, for example by using the Goal Structure Questionnaire that was developed by Lüftenegger et al. (2017), or for example by using measures of actual classroom behaviours such as observations.

Second, in our study we examined the relationship between classroom goal structures and achievement goals, and specified a rather specific relationship between these two. As our study, is a correlational study, we cannot prove a causal relationship between these two. Moreover, it might also be a combination of goals that is important here, implying that a high level of performance goals combined with a low level of mastery goals would be indicative of maladaptive functioning (cf., Rolland, 2012). Linnenbrink (2005) suggested that an environment where group competition as well as mastery goals are stimulated might also be beneficial to academic achievement.

Research on classroom goal structures and achievement goals is continuously developing towards a more sophisticated view on the relationship between learners' goals, the learning environment, and successful learning. Based on our study, there are some suggestions for further research. We would suggest to replicate our study on a larger scale and add a variety of instruments and perspectives to triangulate the outcomes when investigating and measuring teacher motivation and classroom and school goal structures. Furthermore, we believe it is valuable to investigate the relationship between the educational track and the classroom goal structure more closely. We included these variables in our model and their significant relationships does raise new questions. Further research is needed to fully understand how educational tracks and goal orientations are inter-related.

4.3 Conclusion

Our correlational study shows that how teachers are motivated for their work relates to the goals they set for their pupils in their classroom. As such, we provide more information on which factors are important when investigating teachers' classroom goal setting. Our finding that mastery classroom goals are positively related to teacher motivation, suggests that it is interesting to educators and policy makers to consider teachers' motivation as a way to influence the goal setting process within schools. Additionally, it may be interesting to teacher education programs to consider taking into account preservice teachers' motivations for teaching when teaching them about mastery goal setting.

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Samenvatting

De relatie tussen docentmotivatie en hun klasdoelstructuren

In dit onderzoek is gekeken naar de relatie tussen werkmotivatie van VO docenten (vanuit een zelfdeterminatie perspectief) en de bevordering van doelen (vanuit de achievement goal theorie) in hun klas. Er is gekeken naar in hoeverre docenten leerdoelen bevorderen, d.w.z. doelen die gericht zijn op leren en inspanning, in plaats van prestatiedoelen, d.w.z. doelen waarin de focus ligt op competitie. 154 docenten hebben een vragenlijst ingevuld met daarin vragen over hun achtergrond, werkmotivatie en de klasdoelen die zij bevorderen. Het onderzoek laat zien dat docenten vooral autonoom gemotiveerd zijn, en dat docenten hoog scoren op het bevorderen van leerdoelen. Gecontroleerde motivatie blijkt een significante voorspeller voor prestatiedoelen, maar niet voor leerdoelen. Autonome motivatie daarentegen blijkt gerelateerd te zijn aan leerdoelen, maar geen significante voorspeller te zijn wanneer achtergrondkenmerken aan het regressiemodel worden toegevoegd. Aanvullende analyses geven ook het belang van achtergrond kenmerken zoals sekse, jaren lesgeefervaring en onderwijstype (VMBO, HAVO, of VWO). Met deze bevindingen kunnen we meer inzicht krijgen in de vraag hoe we er voor kunnen zorgen dat docenten leerdoelen in hun klas bevorderen.

Kernwoorden: werkmotivatie van docenten; klas doelstructuren; zelfdeterminatie theorie; achievement goal theorie