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Adolescent Academic, Social and Future Achievement Goal Orientations: Implications for Achievement by Gender and Parental Education

Joanna Giota[a] and Daniel Bergh[b]

[a]Department of Education and Special Education, University of Gothenburg, Gothenburg, Sweden; [b]Centre for Research on Child and Adolescent Mental Health, Karlstad University

ABSTRACT

Research on social aspects of academic motivation is scarce. Based on two nationally representative cohorts within the Swedish longitudinal ETF-project, the study examined (a) relationships between academic mastery/performance, social and future achievement goal orientations in the Swedish grade 9 compulsory school (2008/2014); (b) their implications for academic achievement; (c) interaction effects by gender and parental education. Social responsibility exerts the strongest effect on achievement; independently and combined. Girls strive for these goals more often than boys. All orientations are important for achievement; and for disadvantaged students in particular. The findings are important for interventions on enhancing motivation and reducing achievement gaps between student groups.

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Academic; social and future achievement goals; achievement; gender; SES

Introduction

Recent literature reviews and meta-analyses confirm that the types of goals that students pursue in achievement situations are key factors in understanding academic achievement (Huang, 2012). Achievement goals within the Achievement Goal Theory perspective are of the most central components in studies of student motivation: They are also of great importance for a range of valued educational outcomes (Schunk et al., 2008). Achievement goals represent the purposes students have when engaging in a learning task. Two achievement goals have been the focus of much research within this field: mastery goals and performance goals. Overall, mastery goals (wanting to master a task and develop one's competence) are associated with positive outcomes, such as deep processing, intrinsic motivation, greater enjoyment of tasks, increased persistence despite failure and better exam performance. The effects of adopting performance goals (wanting to demonstrate ability and outperform others) are less straightforward; both positive and negative effects have been reported (Huang, 2012). More recent research, where performance has been divided into a performance-approach component (to outperform others and receiving recognition as being competent by peers, teachers and parents) and a performance-avoidance component (to avoid demonstrating a lack of ability and working in school primarily because of the fear to appear incompetent) shows also mixed results when it comes to performance-approach goals. The research on the consequences associated with performance-avoidance goals is unambiguous. These goals are overall associated with negative

CONTACT Joanna Giota joanna.giota@ped.gu.se Department of Education and Special Education, University of Gothenburg, PO Box 300, SE-405 30, Gothenburg, Sweden

outcomes. Subsequent research indicates that when performance-approach goals occur in combination with mastery goals, they may be associated with positive achievement outcomes (Pintrich, 2000 in Giota, 2010; Huang, 2012). Differences in the effects of performance-approach goals by age, gender, achievement level and culture may also occur.

Students, however, have not only goals for their academic work, but also for their interpersonal relationships with peers and teachers (King et al., 2010; Ryan & Shim, 2006) such as being perceived as prosocial or socially responsible (Wentzel, 1998). Achieving one's social goals seems to be as important to students (or even more) as the achievement of academic goals (Dowson & McInerney, 2003; Ryan & Shim, 2006; Wentzel, 1993). Given that social goals are associated with the different ways students approach and exchange with peers and teachers at school (Poortvliet & Darnon, 2010) they have implications for how they succeed academically as well (Makara & Madjar, 2015), both independently and jointly with academic goals (Wentzel, 1993).

Although some attempts to include social goals in achievement goal research have been made in the past and this research is now growing (e.g., Berger & Archer, 2016; Poortvliet & Darnon, 2010; Ryan & Shim, 2006) researchers in this field are still primarily interested in academic mastery and performance goals and students' purposes for succeeding academically. Research on the social aspects of academic motivation is generally scarce. In the few existing studies on social goals, these goals have been conceptualized from an achievement goal perspective as social purposes for academic achievement (King et al., 2010; Ryan & Shim, 2006) or purposes for engaging in interpersonal relationships with others (Makara & Madjar, 2015) and by Wentzel (1993, 1998) as goal content. There seems to be no unity among researchers about the different types of social goals; how they are measured and the differing correlates of these goals.

In contemporary research, future goals are still most commonly investigated as a separate future goal orientation (Lee et al., 2018). As far as we know, McInerney and his colleagues (|Dowson & McInerney, 2003, 2004; Lee et al., 2018; McInerney & Ali, 2006) are the only researchers that have examined the role of proximal social goals in conjunction with future goals and achievement goals in the same motivation model. A future orientation refers to a preparation towards the future and adult functioning and provides students with a suitable reason (or reasons) for attaining goals situated at lower levels in their schooling. Very little is though known about the implications of future goals for student achievement; and how students organize future goals along with academic and social goals (|Giota, 2001, 2010; Lee et al., 2018).

Considering the vast evidence that student motivation plays an important role in the ways students engage in the learning and social classroom processes and accordingly achieve in school, it is remarkable that in Sweden few studies have investigated this issue (e.g., |Giota, 2001, 2010). Interesting enough, drops in motivation and particularly among vulnerable students along with changes in teaching practices from more traditional to more individualistic has been put forward by the National Agency for Education (Skolverket, 2009) as one of the main explanations for Sweden's decline in national and international knowledge assessments from 1994 onwards (cf. Giota & Emanuelsson, 2018; Giota et al., 2019).

Aims of the Study

Given the mixed results with regard to performance goals as compared to mastery goals, and especially when it comes to performance-approach goals, we aim to investigate the ways in which achievement goals influence academic success in the Swedish context, their implications for boys and girls and students from homes with different parental education. In Sweden, the impact of family background (as measured by parental education) on students' academic achievement is found to have increased during the period between 1998 and 2014 (Giota et al., 2019; Yang Hansen & Gustafsson, 2019).

In the study, we adopt a multiple goals perspective on goal preferences, where the still commonplace mastery versus performance goals dichotomy with respect to achievement goals is used as our

frame of reference. In line with McInerney, we extend the focus from the achievement domain to the social and future domains (Dowson & McInerney, 2003; King et al., 2010; Lee et al., 2018). In this way, we acknowledge the importance of adolescents' perceptions of the social classroom context and the future for their personal growth and academic success.

In particular, we aim to investigate (a) the links between mastery versus performance, social responsibility and future achievement goal orientations that grade 9-students report in the Swedish compulsory school (i.e., when they are about 16 years old). Are these students' social and future goals differentially related to their academic goals? We investigate (b) how the four different goal orientations influence student achievement, both individually and when combined. Are social and/or future goals more strongly influencing student achievement in grade 9 than mastery and/or performance goals? We investigate (c) potential statistical interaction effects of goal orientations by gender and parental education on achievement. The research questions will be investigated using data from two nationally representative student cohorts (born in 1992/1998 who attended grade 9 in 2008/2014) collected within the Swedish longitudinal ETF-project (Evaluation Through Follow up) (Svensson, 2011).

Achievement Goal Theory, Multiple Goals and Student Outcomes

Central to mastery goals is the belief that effort leads to academic success, while the focus of performance goals is on one's ability and sense of self-worth, where ability is shown by doing better than others, surpassing norms and meeting external standards (Lee et al., 2018). The association between mastery goals and adaptive outcomes has been consistently revealed across studies. The association between performance goals and maladaptive outcomes on the other hand has not (Marsh et al., 2003). Given the inconsistency in results, a trichotomous achievement goal framework emerged, which divided performance goals into performance approach and performance avoidance goals. The 2×2 framework is the most frequently used modification, where the approach-avoidance distinction is made for both mastery and performance goals, with mastery-approach being essentially identical with mastery goals (Elliot & McGregor, 2001).

Meta-analyses (Huang, 2012) confirm that mastery-approach is an adaptive motivator, often aligning with greater academic performance when students emphasize their constant self-improvement. Performance-approach has demonstrated both adaptive effects such as high grades and negative outcomes (e.g., anxiety). The very few studies examining mastery-avoidance report consistently maladaptive patterns of learning, which applies also to performance-avoidance (Lee et al., 2018).

In the few achievement goal studies that have been conducted from a multiple goals approach, the most facilitative pattern has been low performance/high mastery (Midgley et al., 2001). Pintrich (2000) found though that high performance goals, when combined with high mastery goals, were as adaptive as the combination of high mastery goals and low performance goals (in Giota, 2010). These results are in line with those reported by Wentzel (1996) where students who are high in both performance (defined as social responsibility goals) and mastery goals earn higher grades than students who are high in either mastery or performance goals alone.

In the literature there appears to be a clear connection between mastery goals and intrinsic motivation and performance goals and extrinsic motivation. In a recent study, McInerney and his colleagues (Lee et al., 2018) have classified future goals into intrinsic (focusing on one's personal growth) and extrinsic (focusing on achieving material aspects of life). Future goals and achievement goal orientations of the same valence (e.g., intrinsic future-intrinsic/mastery-approach) were expected and also found to be more strongly related to each other than those of opposite valence (e.g., intrinsic future-extrinsic/performance-approach).

Achievement Goal Orientations, Social Goals, Gender and Parental Education

In the literature, findings regarding achievement goals and gender have been mixed (Giota, 2001). More recent studies report no significant gender differences on mastery, performance-approach

or performance-avoidance goal orientations (Huang, 2012). In terms of social goals, findings from some studies indicate that girls endorse social relationship and social responsibility goals more than do boys (Ryan et al., 1997), whereas boys endorse status goals more than do girls. In Sweden, Giota (2001) found boys to display preferences for self-actualization (mastery) goals more often than girls, while girls more often displayed social responsibility goals; including becoming useful to a future society. To date, still little is known about potential gender differences in the adoption of social and social responsibility goals in relation to achievement goal orientations and in predicting student achievement.

As argued by Berger and Archer (2016), given the consistent SES-academic achievement relationship in childhood and adolescence found in many countries, there are remarkably few studies examining the effects of SES on the formation of student goals. These researchers (Berger & Archer, 2016) provided novel findings in goal achievement research by specifically examining this relationship. They found different motivational patterns to vary according to the SES background of 16–17-year-old students in Australia. As far as we know there are no studies focusing on the influence of parental education (an indicator of parental SES) and achievement goals on student school achievement, which requests attention.

Methods

Participants and Data Collection Procedure

In order to investigate the research questions of this study, questionnaire data from two nationally representative samples of Swedish students in year 9 (16-year-old students born in 1992 and 1998 respectively) were used, along with their average merit credits and background information (gender and parental education). The samples are student cohorts participating in the ongoing Swedish longitudinal Evaluation Through Follow-up project (ETF; Svensson, 2011). In collaboration with Statistics Sweden, ETF has since its start in 1961 collected data in the Swedish comprehensive school (in year 6 and for some cohorts in year 3 and 9) and upper secondary school (mostly in year 12) from 10 nationally representative student cohorts (the oldest born in 1948 and the youngest in 2010). All students are sampled by Statistics Sweden when they attend year 3. The sample size of each student cohort is about 10 per cent of the total age cohort. First a stratified sample of municipalities is drawn and then a sample of classes within the selected municipalities. The surveys in year 6 include all students in the selected classes. In addition to survey data, test and administrative data, and register data are collected and added throughout the life span. In contrast to the surveys in grade 6, which are all administrated by the class teacher in accordance with detailed written instructions, the grade 9 follow ups are administrated by Statistics Sweden, using postal surveys to respondents' home address.

The 1992 cohort sample consisted of 9,890 students, out of which 6,010 responded to the grade 9 postal survey in 2008, resulting in a response rate of 61%. The 1998 cohort sample comprised 9,549 students, of which 4,573 responded in 2014, resulting in a response rate of 48%. As the attrition rate is larger for the 1998 cohort, there may be reasons for caution. Analyses within ETF show, nevertheless, that the application of calibration weights calculated by Statistics Sweden removes most of the bias associated with systematic non-responses in the different ETF-surveys in grade 9.

Instruments

In the present study, 16 items intended to measure four achievement goal orientations (Mastery, Performance, Social responsibility and Future) were used. The items were developed in 2004 within ETF based on previous research (e.g., Giota, 2001) and are referred to as the School Motivation Items (SMI) battery. The original SMI battery included six somewhat modified items from the Patterns

of Adaptive Learning Survey (PALS, Midgley et al., 1997), aimed at measuring the performance-approach and performance-avoidance forms of performance goals. Given the low reliability of three out of six performance goal items in a pilot, only two performance-approach items (To be better than other pupils in the class; To show my teachers that I am smarter than other pupils) and one performance-avoidance (Learn so that I won't appear to be stupid in front of others) item could be used in the 2005 ETF-survey in grade 6, involving students born in 1992.

In further analyses of the SMI battery, a structural equation modelling approach was used (Giota, 2010). In line with results obtained by McInerney (Dowson & McInerney, 2004; McInerney & Ali, 2006), it was concluded that achievement goals as measured by the 16 items in the SMI battery, not only are multidimensional, but also hierarchical in structure, with performance goals being less salient among 13-year old students in Sweden. After these analyses and since 2005, the SMI battery has been used in all ETF-surveys in grades 6 and 9 (until today involving students born in 1992, 1998 and 2004, respectively).

The brief definitions of the four achievement goal orientations to be used in the present study are the same as in Giota (2010) and similar to those used by Dowson and McInerney (2004). In particular, Mastery is defined as achievement in order to attain understanding, academic competence, and ability relative to self-established standards (4 indicators: Learn to understand better; new things; facts; to be smarter). Performance-approach is defined as achievement in order to attain favourable evaluations of own competence or ability (2 indicators). Performance-avoidance is defined as achievement in order to avoid unfavourable evaluations or ability (1 indicator). In the present study, the three performance indicators (see previously comment) have been put together and are used as a measure of a single performance construct, allowing in this way comparisons with previous results (e.g., Giota, 2010; Huang, 2012). Social responsibility is defined as achievement in order to maintain interpersonal commitments, meet social role obligations, or adhere to social and moral norms (5 indicators: Get things done on time; Be a student who do well in school; Do my very best; Work hard even if it is difficult; Be helpful). Future is defined as achievement in order to attain financial gain and/or position in school and/or later life (4 indicators: Learn so that I can get a well-paid job; so I will be able to look after myself when I am an adult; so that I can get a job that I like; Be successful in school so that I can get a place on a good educational programme). The items in the ETF-surveys in grade 9 were of the form "How often are you trying to do the following in school" with response alternatives Always/Almost always, Often, Sometimes, Rarely, Never/Almost never, which applies to both cohorts. Guided by psychometric analyses, for each achievement goal orientation, a composite measure was constructed by the summation of raw scores using the items presented above.

Student Achievement

In the Swedish comprehensive school, grades are based on curriculum goals and subject guidelines that students are expected to achieve by school year 9. Until 2010, both municipal and independent schools were required to grade students at the end of each semester from grade 8. From 2011 onwards that is done from grade 6. Students' average merit rating is calculated just before they apply for upper-secondary school. Students born in 1992 have received grades from grade 8 onwards, while those born in 1998 have received grades from grade 6 onwards. The average merit rating for each of the students in the 1992 cohort is the summation of the 16 best subjects in the students' final grade (where Pass = 10, Pass with Distinction = 15, and Pass with Special Distinction = 20 credits). This implies a maximum total score of 320. In school year 2014/2015 the calculation of the average merit rating was changed to include the 17 best subjects instead of 16, implying a maximum total score of 340. At the same time, a new grading system was implemented (where A = 20, B = 17.5, C = 15, D = 12.5, E = 10, and F = 0). Thus, the achievement results for the 1992 cohort are not completely comparable with those for the 1998 cohort; which is not a problem, given that the main focus of the present study is on associations and comparisons within the two ETF-cohorts rather than between them.

Parental Education

Given that the SES effect on student academic achievement may vary according to different indicators of SES used as units of analysis, in a meta-analysis, Sirin (2005) examined the effect sizes (d) of the three frequently used SES indicators (parental education, parental occupation and parental income). The effect sizes were found to vary between 0.60 and 0.58 and are thus to be considered as highly similar (in Yang Hansen & Gustafsson, 2019). Thus, in line with international as well as other studies on the national level in Sweden (e.g., Giota et al., 2019; Yang Hansen & Gustafsson, 2019) we use parental education provided by Statistics Sweden, based on both the level and orientation of the education parents had when their child participating in this study was 16 year old.

Analytic Approach

Before the 16 indicators of the four achievement goal orientations could be used for the purposes of the present study, the four composite measures on goal orientation, developed for grade 6 students (Giota, 2010), was initially exploratively analysed using Principal Component Analysis (PCA) with oblique rotation (promax). From this analysis it was concluded that the measures also hold for grade 9 students in the two cohorts. Overall, the patterns in the two cohorts of grade 9 students were the same as they were for students in grade 6. The factor loadings varied between 0.62 and 0.89 for the 1992 cohort and 0.55–0.85 for the 1998 cohort.

Analyses on the relationships between the four composite measures on goal orientation, showed Mastery and Performance to correlate 0.26 and 0.25 for the 1992 and 1998 cohorts; similar to the correlation for the 1992 cohort in grade 6 (Giota, 2010). In line with studies, where the dichotomous distinction between mastery and performance goals has been investigated (Ames & Archer, 1988), the obtained correlations were regarded as low enough to support the hypothesis that Mastery and Performance are distinct goals. Mastery and Social responsibility correlated 0.68 for both cohorts, while the correlation between Mastery and Future was 0.55 for the 1992 cohort and 0.52 for the 1998 cohort. The relatively high correlations between Mastery and Social responsibility are in line with previous research by Wentzel (1998) and also McInerney (2004), where these goals correlated highly also with future goals. Social responsibility and Future correlates 0.52 and 0.54 for respective cohorts. In Dowson and McInerney (2004), Performance goals correlated 0.18 with Social Responsibility and 0.12 with Future goals; similar to our study. All bivariate correlations presented here are significant ($p < 0.001$).

In addition, psychometric analyses based on the polytomous Rasch Model (Rasch, 1960/1980) was conducted for each of the four composite measures, using the RUMM2030 software. The purpose of the analyses was to test whether the items worked invariantly across different classifications of individuals that were to be compared. The results showed the goal orientation measures in the two cohorts to fit the Rasch model in an acceptable way, implying that the 16 items in all four measures were relative invariant. There were, however, indications of uniform Differential Item Functioning (DIF), showing girls to score somewhat higher than boys on several items. The Cronbach's Alpha analogous, the Person Separation Index, was acceptable for all four measures, even though it was somewhat lower for Performance. The Cronbach's Alpha coefficients were found to be relatively stable between the two cohorts (they varied between 0.86 for Mastery, 0.84 for Social Responsibility, 0.81 for Future and 0.74 for Performance).

The Rasch analysis resulted in equidistant interval level logit measures suitable for parametric statistical analysis. In the present study, these logit scales where used in the statistical analysis (for introductory presentations of the application of the Rasch Model see e.g., Hagquist et al., 2009). Detailed results from the Rasch analysis are provided upon request from daniel.bergh@kau.se.

In the analyses of the research questions, mean differences for subgroups of individuals (boys/girls and students from homes with different parental education) along the goal orientation measures were analysed, and significance tested using independent samples t-tests (Table 3). The links between goal orientations and school achievement were analysed using linear regression analysis, using

dummy regressor coding for category variables. The composite measures on goal orientation were thus entered as independent variables, separately, and the average merit rating scores as dependent variable (Tables 4–6). The effect size by means of Cohen's f^2 (Cohen, 1988) was calculated, in line with recent recommendations (Selya et al., 2012), in addition to the R^2. In order to investigate whether the associations were similar for different subgroups of individuals (girls vs boys and students from homes with different parental education) formal significance tests were conducted by inclusion of statistical interaction terms. In addition and for descriptive purposes, separate analyses were conducted by gender (Table 5) and parental education (Table 6). In a final step, different combinations of goal orientations were entered into the same regression models (Table 7 (1992 cohort) and Table 8 (1998 cohort)), in order to investigate their simultaneous effects on student achievement, when combined.

Results

Gender and Parental Education Patterns in Goal Orientations

In Tables 1 and 2 are shown respectively the 1992 and 1998 cohorts and the distribution in the response categories of the individual items used to measure the four goal orientations. Overall, the response pattern implies larger proportions in the response categories "Always/Almost always" and "Often" compared to the "Rarely" or "Never/Almost never" categories for Mastery, Social responsibility and Future. The items constituting Performance show an opposite response pattern. In general, girls in both cohorts respond to a higher extent with "Always/Almost always" as compared to boys; especially when it comes to Social responsibility items such as "Do my very best". That is also true for girls and Mastery items such as "Learn to understand" and "Learn new things" and Future (intrinsic) items such as learn to "Choose an education", "Get a liked job" and "Look after myself". When it comes to Performance items, no clear gender pattern in the responses can be noticed, except for "Not to appear stupid" where boys respond to somewhat higher extent with "Never/Almost never" than girls; especially students born in 1998 (Table 2).

Table 3 presents the means along the four goal orientation measures, divided by gender and parental education. In general, girls report a significantly higher mean score (i.e., indicate more of the orientation) compared to boys in all goal orientations; except on Performance for the 1992 cohort. The gender pattern is particularly strong with regard to Mastery and Social responsibility, but also Future, in favour for girls. Regarding parental education, students having parents with higher education (university studies) generally have also a significantly higher average score along all four goal orientation measures compared to students from homes with upper-secondary schooling as the highest education. This pattern does not apply significantly for Performance in the 1992 cohort or Future in the 1992 and 1998 cohorts.

Goal Orientations and Student Achievement by Gender and Parental Education

The results displayed in Table 4 show strong links between all four goal orientations and student achievement. For example, a 1 logit unit increase along the Mastery measure implies an 8.07 credit increase in merit ratings on average for the 1992 cohort. The corresponding figures for Performance and Future are 5.91 and 7.40, respectively. The association is particularly strong for Social responsibility. The 1 logit increase along this measure implies almost 12 (11.67) merit rating credits increase on average. For instance, a student located at the 20th percentile of the Social responsibility measure (Low degree of social responsibility) would on average have a merit rating credit of about 200. The corresponding credit score for a student located at the 80th percentile (High degree of social responsibility) would be about 260 on average. The pattern of associations between goal orientations and student achievement are similar between the two cohorts, but somewhat stronger for the 1992 cohort. Table 4 also shows that girls overall have higher average merit ratings compared to boys, which applies also to students from homes with higher education.

Table 1. The distribution into response categories in the four Goal Orientation scales, with division by sex. Percent (n), using cohort 1992 of the ETF study (Chi-square test of independence).

	Boys					Girls				
	Always/almost always	Often	Sometimes	Rarely	Never/almost never	Always/almost always	Often	Sometimes	Rarely	Never/almost never
Mastery										
Learn to be smarter ***	20.7 (580)	38.4 (1073)	28.2 (788)	9.2 (258)	3.5 (98)	27.0 (846)	38.4 (1205)	24.1 (757)	8.4 (265)	2.1 (66)
Learn facts n.s.	16.1 (451)	38.6 (1080)	35.6 (995)	8.0 (223)	1.7 (48)	18.2 (568)	39.6 (1236)	33.0 (1030)	7.7 (242)	1.6 (49)
Learn to understand ***	21.8 (611)	42.7 (1196)	28.2 (788)	5.6 (156)	1.7 (47)	32.9 (1032)	45.6 (1431)	17.8 (558)	3.0 (94)	0.6 (20)
Learn new things ***	25.0 (697)	43.5 (1213)	25.8 (719)	4.4 (124)	1.4 (38)	34.3 (1074)	44.4 (1391)	18.1 (566)	2.7 (84)	0.6 (20)
Performance										
Be better than others n.s.	8.9 (248)	15.4 (431)	27.8 (777)	29.4 (824)	18.5 (519)	8.6 (271)	14.7 (461)	28.7 (901)	30.5 (958)	17.4 (545)
Not appear stupid *	7.1 (197)	16.2 (453)	25.1 (702)	29.5 (823)	22.1 (617)	7.7 (242)	17.3 (543)	23.9 (750)	31.9 (1000)	19.1 (597)
Show teacher **	6.2 (172)	11.2 (313)	19.9 (555)	29.9 (836)	32.8 (917)	4.8 (150)	8.8 (276)	19.3 (605)	32.7 (1025)	34.3 (1075)
Social responsibility										
Do things on in time ***	25.0 (699)	41.5 (1161)	22.1 (619)	8.0 (223)	3.4 (94)	39.9 (1251)	37.4 (1172)	16.4 (515)	4.7 (146)	1.6 (51)
Be responsible ***	21.0 (586)	35.8 (1000)	28.6 (800)	10.6 (297)	4.0 (112)	38.2 (1199)	35.6 (1115)	18.2 (572)	6.3 (197)	1.7 (53)
Do well as a pupil ***	21.6 (603)	34.4 (961)	28.2 (789)	11.2 (312)	4.6 (129)	35.0 (1097)	34.1 (1069)	21.4 (670)	6.9 (216)	2.6 (81)
Do my very best ***	31.9 (890)	40.8 (1139)	21.0 (587)	5.1 (141)	1.3 (35)	47.8 (1500)	38.0 (1190)	11.9 (373)	1.9 (58)	0.4 (14)
Be helpful ***	18.8 (525)	42.2 (1178)	30.3 (846)	6.8 (190)	2.0 (55)	30.6 (960)	42.6 (1336)	21.5 (673)	4.3 (134)	1.1 (34)
Future										
Get a well-paid job ***	38.3 (1071)	32.5 (909)	18.0 (503)	7.7 (216)	3.4 (95)	37.2 (1167)	30.1 (943)	19.1 (598)	10.6 (332)	3.1 (97)
Look after oneself ***	30.8 (858)	37.5 (1047)	21.1 (590)	7.6 (213)	2.9 (82)	40.4 (1269)	32.9 (1033)	18.6 (583)	6.5 (204)	1.6 (49)
To get a liked job ***	50.5 (1409)	33.6 (936)	11.8 (328)	2.8 (79)	1.3 (36)	60.5 (1897)	27.5 (862)	9.1 (286)	2.3 (73)	0.6 (20)
Chose education ***	37.3 (1042)	40.5 (1134)	16.5(462)	4.3 (119)	1.4 (40)	47.0 (1477)	37.8 (1188)	10.8 (340)	3.5 (111)	0.9 (28)

Notes: ***=$p < 0.001$; **=$p \leq 0.01$; *=$p \leq 0.05$.

Table 2. The distribution into response categories in the four Goal Orientation scales, with division by sex. Percent (n), using cohort 1998 of the ETF study (Chi-square test of independence).

	Boys					Girls				
	Always/ almost always	Often	**Some times**	Rarely	**Never/ almost never**	Always/ almost always	Often	Sometimes	Rarely	Never/ almost never
Mastery										
Learn to be smarter*	23.1 (473)	39.3 (804)	24.4 (498)	9.0 (184)	4.2 (8.6)	25.5 (636)	38.3 (955)	24.0 (599)	9.5 (237)	2.6 (66)
Learn facts n.s.	18.4 (376)	40.5 (827)	31.0 (633)	7.6 (156)	2.4 (50)	18.4 (458)	37.5 (936)	32.7 (814)	9.4 (235)	2.0 (50)
Learn to understand***	26.0 (530)	43.7 (891)	23.6 (481)	5.2 (105)	1.5 (30)	34.8 (867)	41.9 (1042)	18.5 (460)	3.7 (92)	1.1 (27)
Learn new things***	27.7 (567)	42.5 (869)	24.1 (492)	4.3 (88)	1.4 (28)	34.2 (852)	41.9 (1043)	19.7 (490)	3.6 (89)	0.7 (18)
Performance										
Be better than others n.s.	10.9 (222)	18.4 (376)	28.9 (590)	26.5 (541)	15.4 (315)	10.7 (267)	18.9 (471)	29.9 (743)	26.5 (662)	13.9 (346)
Not appear stupid***	8.1 (166)	15.7 (321)	24.1 (493)	25.3 (517)	26.7 (545)	11.1 (275)	18.6 (462)	23.5 (584)	27.7 (690)	19.1 (476)
Show teacher***	7.6 (155)	12.3 (251)	20.2 (411)	27.4 (559)	32.5 (663)	6.6 (165)	9.3 (231)	20.6 (512)	32.3 (804)	31.2 (777)
Social responsibility										
Do things on in time***	33.5 (683)	37.0 (755)	20.6 (421)	6.6 (135)	2.3 (47)	47.8 (1192)	31.4 (782)	14.7 (367)	4.5 (112)	1.6 (41)
Be responsible***	30.1 (615)	37.9 (773)	22.7 (464)	7.1 (146)	2.2 (44)	47.6 (1187)	33.3 (831)	13.8 (344)	4.1 (102)	1.1 (28)
Do well as a pupil***	28.1 (572)	36.0 (734)	25.7 (524)	7.4 (151)	2.8 (58)	44.6 (1112)	32.3 (805)	17.0 (423)	4.6 (115)	1.5 (38)
Do my very best****	34.8 (713)	39.0 (797)	19.8 (406)	5.0 (103)	1.3 (27)	51.0 (1272)	34.1 (852)	11.7 (291)	2.8 (69)	0.5 (12)
Be helpful***	24.6 (502)	43.8 (893)	24.3 (496)	5.5 (112)	1.7 (34)	41.8 (1041)	38.6 (962)	16.2 (403)	2.7 (67)	0.7 (17)
Future										
Get a well-paid job*	38.9 (795)	31.0 (633)	17.9 (366)	7.3 (150)	4.9 (101)	42.7 (1064)	29.0 (723)	16.6 (414)	8.1 (203)	3.5 (87)
Look after oneself***	36.1 (735)	35.7 (726)	19.9 (405)	5.3 (108)	3.0 (61)	44.3 (1101)	33.2 (824)	15.9 (395)	4.9 (121)	1.7 (42)
To get a liked job***	56.5 (1154)	29.3 (599)	10.4 (213)	2.4 (49)	1.4 (28)	65.3 (1627)	24.6 (612)	7.6 (190)	1.8 (45)	0.7 (18)
Chose education***	41.1 (842)	39.0 (799)	14.0 (287)	3.9 (79)	2.0 (42)	50.1 (1250)	36.0 (899)	9.9 (248)	3.0 (76)	0.9 (23)

Notes: ***=$p < 0.001$; **=$p \leq 0.01$; *=$p \leq 0.05$.

Table 3. Means and standard deviations for groups of individuals along the different composite measures of Goal Orientation. ETF cohorts of 1992 and 1998. Significance tests using t-test for independent samples.

	1992				1998			
	Mastery M (SD)	Performance M (SD)	Social responsibility M (SD)	Future M (SD)	Mastery M (SD)	Performance M (SD)	Social responsibility M (SD)	Future M (SD)
Total Mean	1.90 (2.1)	−0.61 (1.3)	1.56 (1.6)	1.81 (1.6)	1.80 (2.0)	−0.42 (1.2)	1.82 (1.6)	1.69 (1.4)
Sex								
Boys	1.63 (2.1)	−0.60 (1.4)	1.18 (1.6)	1.67 (1.5)	1.69 (2.0)	−0.47 (1.2)	1.45 (1.5)	1.54 (1.4)
Girls	2.13 (2.0)	−0.62 (1.3)	1.89 (1.6)	1.92 (1.6)	1.89 (2.0)	−0.40 (1.3)	2.12 (1.6)	1.82 (1.4)
	***	ns	***	***	***	**	***	***
Parental educational level								
At most upper-Secondary School	1.78 (2.1)	−0.64 (1.3)	1.47 (1.6)	1.79 (1.6)	1.70 (2.0)	−0.49 (1.2)	1.69 (1.6)	1.67 (1.4)
Higher education	2.0 1(2.0)	−0.59 (1.3)	1.64 (1.6)	1.81 (1.5)	1.89 (1.9)	−0.37 (1.2)	1.92 (1.6)	1.69 (1.4)
	***	ns	***	ns	**	***	***	ns

***=$P < 0.001$, **=$P < 0.01$, *=$P < 0.05$ ns = non significant.

Table 4. Linear regression with the four Goal orientation scales as independent variables, and Average merit Rating as dependent variable, in separate models. Adjustments made for sex and parental educational level (cohorts 1992 and 1998).

	Cohort 1992		Cohort 1998	
Variables	b	r^2 (Cohen's f^2)	b	r^2 (Cohen's f^2)
Mastery (A)	8.07***	0.24 (0.31)	5.79***	0.20 (0.25)
Sex				
Girl	16.49***		19.33***	
Boy	0		0	
Parental educational level				
Higher Education	35.90***		33.21***	
At most Upper-Secondary school	0		0	
Performance (B)	5.91***	0.17 (0.21)	4.68***	0.16 (0.19)
Sex				
Girl	20.25***		20.24***	
Boy	0		0	
Parental educational level				
Higher Education	37.56***		33.75***	
At most Upper-Secondary school	0		0	
Social responsibility (C)	11.67***	0.26 (0.35)	9.77***	0.24 (0.32)
Sex				
Girl	11.99***		13.92***	
Boy	0		0	
Parental educational level				
Higher Education	35.63***		31.91***	
At most Upper-Secondary school	0		0	
Future (D)	7.40***	0.19 (0.23)	5.58***	0.18 (0.22)
Sex				
Girl	18.46***		19.07***	
Boy	0		0	
Parental educational level				
Higher Education	37.58***		34.31***	
At most Upper-Secondary school	0		0	

Note: ***=$P < 0.001$, **=$P < 0.01$, *=$P < 0.05$.
(A)=Analysis using Mastery, Sex and Parental educational level as independent variables
(B)= Analysis using Performance, Sex and Parental educational level as independent variables
(C)= Analysis using Social responsibility, Sex and Parental educational level as independent variables
(D)= Analysis using Future, Sex and Parental educational level as independent variables

Differences between boys and girls in the effects of goal orientations on average merit ratings were analysed by including and testing statistical interaction terms. The findings show the links between Mastery and average merit rating to be modified by gender in the 1992 cohort. That is, the interaction term Mastery by Girl was found to be significant for the 1992 cohort ($b = 1.607$, $p < 0.05$), but not for the 1998 cohort ($b = 1.168$, $p > 0.05$), implying that the association was stronger for girls in the 1992 cohort as compared to that of boys. The corresponding interaction term for Performance was found to be non-significant in the 1992 cohort ($b = 1.136$, $p > 0.05$), but significant for the 1998 ($b = 2.340$, $p < 0.05$). The interaction term Social responsibility by Girl was significant for both the 1992 ($b = 2.031$, $p < 0.05$) and 1998 ($b = 2.845$, $p < 0.05$) cohort, implying that the association between Social responsibility and average merit rating is stronger for girls as compared to that of boys in both cohorts. The association between Future and average merit rating was not modified by gender in neither cohort and is thus similar for girls and boys in both cohorts. Table 5 displays the regression analysis divided by gender for descriptive purposes. This analysis shows that regardless of goal orientation the 1 logit unit increase for girls consistently implies a somewhat larger merit rating increase compared to the corresponding increase for boys, on average. This is true in particular when it comes to the association between Social responsibility and average merit rating, which is significantly modified by gender, consistently over cohorts. On average, 1 logit increase along the Social responsibility measure implies a 10.6 merit rating credit increase for boys and a 12.6 credit increase for girls in the 1992 cohort. The corresponding credit increase for the 1998 cohort is 8.11 for boys and 11.09 for girls.

Table 5. Linear regression with the four Goal Orientation scales as independent variables, and Average merit Rating as dependent variable, in separate models. Adjustments made for parental educational level. Separate analysis by sex (cohorts 1992 and 1998).

	Cohort 1992				Cohort 1998				
Variables	*b*	r^2 (Cohen's f^2)	*b*	r^2 (Cohen's f^2)	*b*	r^2 (Cohen's f^2)	*b*	r^2 (Cohen's f^2)	
	Boys Only		Girls Only		Boys Only		Girls Only		
Mastery	7.26***	0.20 (0.25)	8.86***	0.23 (0.30)	5.13***	0.18 (0.22)	6.35***	0.17 (0.21)	
Parental educational level									
Higher Education	35.19***		36.44***		35.69***		31.16***		
At most Upper-Secondary school	0		0		0		0		
Performance		5.25***	0.14 (0.16)	6.53***	0.15 (0.18)	3.15**	0.14 (0.16)	6.08***	0.13 (0.15)
Parental educational level									
Higher Education	36.88***		38.05		36.17***		31.65***		
At most Upper-Secondary school	0		0		0		0		
Social responsibility	10.59***	0.22 (0.28)	12.62***	0.25 (0.33)	8.11***	0.20 (0.25)	11.08***	0.23 (0.30)	
Parental educational level									
Higher Education	35.69***		35.37***		34.77***		29.50***		
At most Upper-Secondary school	0		0		0		0		
Future		7.41***	0.17 (0.21)	7.39***	0.17 (0.21)	5.25***	0.16 (0.19)	5.84***	0.13 (0.15)
Parental educational level									
Higher Education	36.29***		38.73***		36.44***		32.59***		
At most Upper-Secondary school	0		0		0		0		

Note: ***=$P < 0.001$, **=$P < 0.01$, *=$P < 0.05$.

Next, differences in associations regarding parental education were analysed, using statistical interaction terms (Parental education by Goal orientation). The analyses show the association between Mastery and average merit ratings to be significantly modified by the interaction term at most upper-secondary schooling by Mastery, both for the 1992 (b = 1.302, $p < 0.05$) and the1998 (b = 1.581, $p < 0.05$) cohort. Regarding Performance, no significant interaction effect by parental education could be identified in any of the two student cohorts.

The association between Social responsibility and average merit ratings was also found to be significantly stronger for students from homes with upper-secondary schooling as highest education, compared to those from homes with higher education (university studies) for both cohorts (for the 1992 cohort, b = 2.271, $p < 0.05$ and for the 1998, b = 1.691, $p < 0.05$). Future displays the same pattern of interaction with parental education as Mastery and Social responsibility (for the 1992 cohort, b = 2.574, $p < 0.05$ and for the 1998, b = 2.261, $p < 0.05$). In Table 6, the regression analysis divided by parental education is shown for descriptive purposes.

Combinations of Goal Orientations and Student Achievement

Unlike Tables 4–6, where adjustments for gender and parental education were conducted, Table 7 (cohort born 1992) and Table 8 (cohort born 1998) show the links between each of the four individual goal orientation measures and Average Merit Ratings analysed separately (Model A) with no adjustments. Each A-model is to be compared to models (Model B to Model G) where combinations of goal orientations have been analysed simultaneously.

Table 7, Model A, shows a one logit increase along the Mastery goal orientation scale to imply a 8.93 credit increase on average for the 1992 cohort of Merit ratings. By taking into account also the effect of Social responsibility (Model C) the effect of Mastery on Average Merit Ratings is much smaller (3.35). For the 1998 cohort (Table 8), the effect of Mastery turns non-significant. This indicates that Social Responsibility and Mastery are not mutually exclusive, but complementary, with Social Responsibility contributing stronger to the effect on student achievement. When combined with Performance (Model B) or Future (Model D), the effect of Mastery on student achievement is relatively stable for both cohorts (Tables 7 and 8).

In Table 7, Model A, a one logit increase along the Performance goal orientation scale implies a 6.04 credit increase of Merit Ratings on average. When analysed with other goal orientations simultaneously and, in particular, when taking also the effect of Mastery (Model B) or Social responsibility (Model E) into account, the effect of Performance shows a substantial decrease (2.61 and 1.80, respectively). The decrease is smaller when taking the effect of Future (Model F) into account (3.88). The same pattern appears in Table 8, for the 1998 cohort.

Social Responsibility demonstrates the strongest link to Average Merit Ratings (Model A) for both cohorts. The effect of Social Responsibility seems to be relatively stable (Model E, G) in the analyses. It is only when entered to the same model as Mastery (Model C) as a substantial decrease can be noted for the 1992 cohort (Table 7).

A one logit increase along Future implies a 7.88 credit Merit Rating increase on average for the 1992 cohort (Model A, Table 7). Together with Mastery (Model D) the effect of Future shows a substantial decrease for both cohorts (Tables 7 and 8) and turns non-significant when analysed simultaneously with Social responsibility. With Performance, a relatively small change of the effect on student achievement can be observed.

Discussion

Relationships Between Achievement Goal Orientations

In line with the few studies adopting a multiple achievement goals approach (Dowson & McInerney, 2004; Giota, 2010; Pintrich, 2000 in Giota, 2010) our findings show Mastery, Social Responsibility and Future to be highly related to one another in both ETF-cohorts; with Performance having the

Table 6. Linear regression with the four Goal Orientation scales as independent variables, and Average merit Rating as dependent variable, in separate models. Adjustments made for Sex. Analyses are divided by parental educational level (cohorts 1992 and 1998).

	Cohort 1992				Cohort 1998			
Variables	*b*	r^2 (Cohen's f^2)	*b*	r^2 (Cohen's f^2)	*b*	r^2 (Cohen's f^2)	*b*	r^2 (Cohen's f^2)
	Higher Education		At most Upper- Secondary Ed.		Higher Education		At most Upper- Secondary Ed.	
Mastery	7.41***	0.14 (0.16)	8.77***	0.14 (0.16)	5.10***	0.10 (0.11)	6.63***	0.11 (0.12)
Sex								
Girls	17.58***		15.37***		17.59***		21.57***	
Boys	0		0		0		0	
Performance	5.06***	0.07 (0.08)	6.84***	0.06 (0.06)	4.29***	0.06 (0.06)	5.26***	0.06 (0.06)
Sex								
Girls	20.87***		19.73***		18.44***		22.54***	
Boys	0		0		0		0	
Social responsibility	10.05***	0.16 (0.19)	12.89***	0.17 (0.20)	9.10***	0.15 (0.18)	10.55***	0.15 (0.18)
Sex								
Girls	12.94		11.28***		12.38***		15.95***	
Boys	0		0		0		0	
Future	6.14***	0.09 (0.10)	8.79***	0.09 (0.10)	4.63***	0.07 (0.08)	6.78***	0.08 (0.09)
Sex								
Girls	19.92***		16.85***		17.63***		20.88***	
Boys	0		0		0		0	

Note: ***=$P < 0.001$, **=$P < 0.01$, *=$P < 0.05$.

Table 7. Linear regression analysis of the links between Goal Orientation and Average Merit Ratings (b), using the 1992 cohort.

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Mastery	8.93***	8.52***	3.35***	8.16***			
Performance	6.04***	2.61***			2.08***	3.88***	
Social Responsibility	13.24***		10.40***		12.55***		12.44***
Future	7.88***			1.88***		7.02***	1.10*
r^2 (Cohen's f^2):		0.12 (0.14)	0.16 (0.19)	0.12 (0.14)	0.15 (0.18)	0.06 (0.06)	0.15 (0.18)

Model A = Individual Goal Orientation Scales analysed separately, no adjustments;
Model B = Mastery orientation analysed accounting for the effect of Performance;
Model C = Mastery orientation analysed accounting for the effect of Social Responsibility
Model D = Mastery orientation analysed accounting for the effect of Future
Model E = Performance orientation analysed accounting for the effect of Social responsibility
Model F = Performance orientation analysed accounting for the effect of Future
Model G = Social responsibility analysed accounting for the effect of Future

Table 8. Linear regression analysis of the links between Goal Orientation and Average Merit Ratings (b), using the 1998 cohort.

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Mastery	6.43***	5.99***	0.68 ns	5.70***			
Performance	5.73***	3.17***			2.45***	4.01***	
Social Responsibility	13.21***		10.79***		10.96***		11.84***
Future	6.21***			1.97***		5.30***	−1.02 ns
r^2 (Cohen's f^2):		0.07 (0.08)	0.13 (0.15)	0.07 (0.08)	0.13 (0.15)	0.04 (0.04)	0.13 (0.15)

Model A = Individual Goal Orientation Scales analysed separately, no adjustments;
Model B = Mastery orientation analysed accounting for the effect of Performance;
Model C = Mastery orientation analysed accounting for the effect of Social Responsibility
Model D = Mastery orientation analysed accounting for the effect of Future
Model E = Performance orientation analysed accounting for the effect of Social responsibility
Model F = Performance orientation analysed accounting for the effect of Future
Model G = Social responsibility analysed accounting for the effect of Future

lowest association to the other three goal orientations (cf. correlations in Huang, 2012). In Sweden, developing students' capacity to take responsibility for their own learning and act responsibly in school are main goals in the national curricula, as is to support their desire to express themselves by using different forms of knowledge. To prepare students for further education or employment is another main educational objective (Giota et al, 2018), as it is in many other and diverse countries. Seen from a curriculum perspective and by taking into consideration previous research (|Dowson & McInerney, 2003, 2004; Giota, 2010; Lee et al., 2018; cf. Ryan et al., 1997; |Wentzel, 1993, 1998) our assumption that Social Responsibility should be more strongly related to Mastery than to Performance has thus been supported by both ETF-samples. The fact that the pursuit of performance-goals is less salient among 16-year-old, grade-9 students in Sweden, which was also the case in grade 6 (Giota, 2010), may partly be explained by Sweden's long tradition of individualization advocated by the national curricula since the 1960s (Giota & Emanuelsson, 2018). Accordingly, all teaching should be adapted to each child's individual prerequisites, needs and intrinsic motivation for learning at the same time as different collaborations between teachers and students, group work and democratic values are endorsed. Consequently, the strong performance-goal focus on outperforming others or trying to demonstrate one is right may be less desirable by teachers in Sweden. According to Poortvliet and Darnon (2010), compared to mastery or intrinsic goals, performance goals are often seen as "bad goals" by teachers, which may explain other findings in the field as well. The strong relation between Mastery and Future could also be expected given that intrinsic future goals as in Future and achievement goals of the same valence as in Mastery in previous research (Lee et al., 2018) are found to be more strongly related than those of opposite valence.

The findings of this study so far provide us with valuable insights into the ways in which adolescents in Sweden and elsewhere may coordinate multiple goals at the end of compulsory schooling. In line with previous research, we found social responsibility goals to be highly relevant to students in

grade 9 back in 2008 and 2014 and of equal importance to them as academic mastery goals; while the performance goals pursuing seem to be less salient, but still significant. The pursuing of more distal future goals is also as important to students as proximal mastery goals (Dowson & McInerney, 2003). Consequently, in order to enhance school motivation, teachers should encourage students to adopt intrinsic achievement goal orientations and intrinsic future goals at the same time.

Achievement Goal Orientations and Student Achievement

Our findings show all four achievement goal orientations to be strongly linked to student achievement, with Performance showing somewhat lower, but significant associations and Social responsibility the highest, followed by Mastery and Future, in both ETF-cohorts. Given the host of positive outcomes associated with mastery goals (Huang, 2012), the strong link between Mastery and student achievement was expected. The even stronger link between Social responsibility and student achievement is not strange either, but in line with unambiguous evidence showing students who report high levels of pursuing responsibility goals to receive high (if not the highest) grades in school (Wentzel, 1993). This link may also partly reflect previous research in Sweden, suggesting that grades in compulsory schools not only reflect students' general and domain-specific skills and aptitudes. They also reflect their overall adjustment to the school system; referring to factors such as the social manners of the student, which is thought to influence the grades assigned by different teachers (Andersson, 1998; Giota, 2001).

Are the links between goal orientations and achievement the same for different groups?

Landstedt et al. (2009) found that both boys and girls strive for social recognition from teachers and peers through different forms of performance in school, but still this appears to be even more important for girls. In Sweden, girls show greater academic motivation than boys and attain higher marks in grade 9 of the Swedish compulsory school in all subjects (Björnsson, 2005; Giota, 2001; cf. Huang, 2012). Thus, girls appear to be more conscientious and hard-working; trying to live up to their own and others' expectations of being socially responsible and successful in school (Giota, 2001; Ryan et al., 1997; Wentzel, 1998). These findings may explain the link between Social responsibility and average merit rating that we found to be significantly stronger for girls in both ETF-cohorts; the link regarding Mastery, which was stronger for girls in the 1992 cohort; and the significantly stronger link for girls regarding Performance in the 1998 cohort. Teachers' preferences for socially responsible students (Wentzel, 1998) and girls being willing to adhere to social rules and role expectations more often than boys may also explain girls' achievement advantage. Given that few studies have examined gender differences in social responsibility goals and the mixed findings regarding achievement goals and gender, as also shown by our study, much more work is needed to understand the interaction effects of these goal orientations and gender on academic achievement. However, girls' effort to live up to academic demands, and being socially responsible, may have a high price. In Sweden, girls' higher levels of self-perceived academic demands were linked to higher levels of stress and considerably higher self-reported mental health problems in grade 9 than those of boys (Giota & Gustafsson, 2017).

Our findings show in addition the link between Mastery, Social responsibility, Future and student achievement to be significantly higher for students from homes with experience of upper-secondary schooling as highest parental education in both ETF-cohorts. Future showed a particularly strong link to achievement for students with lower educational family background. These students may prioritize future goals, such as being able to choose a further education and a liked job, as a strategy to accomplish what Jury et al. (2018) term an upward mobility, in order to build or secure their future lives as adults differently than their parents. We found the achievements of students from lower educational family background to benefit extra of being socially engaged in school and endorsing social responsibility goals. In both cohorts, students from highly educated homes are more mastery oriented, but also socially responsible. This is also true for Performance in the 1992 cohort, while no differences are obtained when it comes to Future. These results are in line with Berger and Archer (2016), who concluded that high SES students in Australia are no more likely than low SES students

to have social goals in the classroom. The case is that low SES students have fewer academic goals than high SES students.

Given that in Sweden, the impact of family background on student achievement has increased from 1998 onwards (Giota et al., 2019; Yang Hansen & Gustafsson, 2019), these finding are of vast importance for educational interventions on enhancing student motivation and decreasing the gap in achievement between student groups from different family backgrounds and for disadvantaged students, in particular.

Combinations of Goal Orientations and Achievement

In our study, when Social responsibility was combined with Mastery, the influence of Mastery on achievement became smaller for the 1992 cohort, and turned non-significant for the 1998 cohort. As in previous research (|Dowson & McInerney, 2003, 2004; Ryan & Shim, 2006; Wentzel, 1993), this finding suggests that social responsibility goals are highly adaptive goals, whose influence on achievement when combined with academic mastery goals become complementary (|Wentzel, 1993, 1996). The influence of Performance on achievement when combined with Mastery in particular or Social responsibility shows a substantial decrease. On the basis of previous findings (Midgley et al., 2001) we may thus conclude that when mastery goals are high, the influence of performance (-approach) goals on achievement becomes weaker, but still significantly associated with academic achievement (Huang, 2012).

Our findings show Mastery when combined with Future to influence strongly student achievement in both ETF-cohorts. This facilitative pattern is in line with research (Vansteenkiste et al., 2006) suggesting that students who combine intrinsic future goals (as in Future) with mastery goals are more likely to commit to meaningful learning, further their studies and perform well (or better) than students who perceive education mainly as a means to enhance one's status or wealth. The somewhat weaker influence of Future when combined with Mastery may be due to the fact that Mastery involves proximal and more specific goals that engage students in the school tasks in a here-and-now perspective, while Future involve distal and more general goals. We suggest that the finding of the personal benefits shown by Mastery and Future in our study when combined is novel and a contribution to the field (see also Giota, 2001).

Limitations

A limitation of the present study might be the insufficient indicators of the avoidance form of performance. However, as pointed by Huang (2012) the approach forms of performance and mastery goals are paradoxically those two goals whose effects are still the object of much debate among achievement goal theorists. Thus, our study aimed to examine the relative salience of mastery and performance (-approach) goals in the Swedish context with regard to social responsibility goals, which in previous research are conceptualized as adaptive approach social goals (Dowson & McInerney, 2003, 2004; |Ryan & Shim, 2006). In line with international (Sirin, 2005) and other nationally representative studies (Giota et al., 2019; Yang Hansen & Gustafsson, 2019) we used parental education us a measure of SES. Given the wide-ranging methodological approaches to measuring family background within achievement goals research, to discuss advantages/disadvantages of different SES indicators used hasn't been within the scope of our study. This is an issue to be considered in future research, which applies also to the issue of overlap between SES and students' ethnic background (cf. Alivernini et al., 2018; Urdan, 2004).

Conclusions

The relationships between the four different achievement goal orientations examined here reflect students' beliefs about how to achieve academic success in grade 9 of the Swedish compulsory school.

All four were found to significantly influence student achievement, both independently and when combined. Social responsibility goals show the strongest link to achievement in both ETF-cohorts, followed by mastery and future goals. When combined, social responsibility goals contribute stronger to achievement than mastery or performance goals. Given the strong link of social responsibility to achievement, the present study provides support for the inclusion of social responsibility goals in examining student motivation in the classroom. A key implication of the study is consequently the recognition that students have multiple reasons for engagement in academic settings, where some of them are social, while others are future aspirations. This knowledge broadens our understanding of students' motivational goals beyond the mastery–performance distinction commonly studied by achievement goal theorists. In line with Berger and Archer (2016) our findings show students' motivational patterns to vary according to their family background, affecting their academic achievements in grade 9 differently. The fact that there are almost no studies examining the relevance of multiple goal pursuit for academic outcomes in relation to family background differences our results are to be seen as novel and a contribution to the field. This area of future research is needed, especially when it comes to the education and career aspirations of students from disadvantaged backgrounds.

With regard to practice, our findings suggest that educational interventions that take into consideration the multiple goals strivings of students to improve achievement outcomes may be more effective than those focusing on one type of goals at a time. In Sweden, teaching practices in grade 9 have changed between 2003 and 2014 from more conventional to more individualistic. In spite of education reforms in Sweden, family background as measured by parental education was found to be equally important for students' school results across 2003–2014 as in the early 1990s and actually increase slightly (Yang Hansen & Gustafsson, 2019). The question is thus what kind of goals students bring to the classroom and which goals teachers expect students to set up and achieve. Very little is known about these matters. Without this knowledge, curriculum reforms and teaching practices will only partly be successful in implementing educational goals and supporting the motivation and achievements of all students.

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References

Alivernini, F., Manganelli, S., & Lucidi, F. (2018). Personal and classroom achievement goals: Their structures and relationships. *Journal of Psychoeducational Assessment*, *36*(4), 354–365. doi:10.1177/0734282916679758

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Pupils' learning strategies and motivation processes. *Journal of Educational Psychology*, *80*(3), 260–267. doi:10.1037/0022-0663.80.3.260

Andersson, A. (1998). The dimensionality of the leaving certificate in the Swedish compulsory school. *Scandinavian Journal of Educational Research*, *42*(1), 25–40. doi:10.1080/0031383980420102

Berger, N., & Archer, J. (2016). School socio-economic status and student socio-academic achievement goals in upper secondary contexts. *Social Psychology of Education*, *19*(1), 175–194. doi:10.1007/s11218-015-9324-8

Björnsson, M. (2005). *Kön och skolframgång. Tolkningar och perspektiv* [Gender and school success. Interpretations and perspectives]. Skolverket.

Cohen, J. E. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Erlbaum Associates, Inc.

Dowson, M., & McInerney, D. M. (2003). What do students say about their motivational goals? Towards a more complex and dynamic perspective on student motivation. *Contemporary Educational Psychology*, *28*(1), 91–113. doi:10.1016/S0361-476X(02)00010-3

Dowson, M., & McInerney, D. M. (2004). The development and validation of the goal orientation and learning strategies survey (goals-S). *Educational and Psychological Measurement*, *64*, 290–310. doi:10.1177/0013164403251335

Elliot, A. J., & McGregor, H. A. (2001). A 2 × 2 achievement goal framework.. *Journal of Personality and Social Psychology*, *80*(3), 501–519. doi:10.1037/0022-3514.80.3.501
Giota, J. (2001). *Adolescents' perceptions of school and reasons for learning*. Acta Universitatis Gothoburgensis.
Giota, J. (2010). Multidimensional and hierarchical assessment of adolescent motivation in school. *Scandinavian Journal of Educational Research*, *54*(1), 83–97. doi:10.1080/00313830903488486
Giota, J., Bergh, D., & Emanuelsson, I. (2019). Changes in individualized teaching practices in municipal and independent schools 2003, 2008 and 2014 - student achievement, family background and school choice in Sweden. *Nordic Journal of Studies in Educational Policy*, *5*(2), 78–91. doi:10.1080/20020317.2019.1586513
Giota, J., & Emanuelsson, I. (2018). Individualized teaching practices in the Swedish comprehensive school from 1980 to 2014 in relation to education reforms and curricula goals. *Nordic Journal of Studies in Educational Policy*, *4*(3), 144–155. doi:10.1080/20020317.2018.1541397
Giota, J., & Gustafsson, J.-E. (2017). Perceived demands of schooling, stress and mental health: Changes from grade 6 to grade 9 as a function of gender and cognitive ability. *Stress and Health*, *33*(3), 253–266. doi:10.1002/smi.2693
Hagquist, C., Bruce, M., & Gustavsson, P. (2009). Using the Rasch Model in nursing research: An introduction and illustrative example. *International Journal of Nursing Studies*, *46*(3), 380–393. doi:10.1016/j.ijnurstu.2008.10.007
Huang, C. (2012). Discriminant and criterion-related validity of achievement goals in predicting academic achievement: A meta-analysis. *Journal of Educational Psychology*, *104*(1), 48–73. doi:10.1037/a0026223
Jury, M., Bruno, A., & Darnon, C. (2018). Doing better (or worse) than one's parents: Social status, mobility and performance-avoidance goals. *British Journal of Educational Psychology*, *88*(4), 659–674. doi:10.1111/bjep.12210
King, R., McInerney, D., & Watkins, D. (2010). Can social goals enrich our understanding of students' motivational goals? *Journal of Psychology in Chinese Societies*, *11*(2), 1–16.
Landstedt, E., Asplund, K., & Gillander, K. (2009). Understanding adolescent mental health: The influence of social processes, doing gender and gendered power relations. *Sociology of Health & Illness*, *31*(7), 962–978. doi:10.1111/j.1467-9566.2009.01170.x
Lee, J. Q., McInerney, D. M., Liem, G. A., & Ortiga, Y. P. (2018). The relationship between future goals and achievement goal orientations: An intrinsic-extrinsic motivation perspective. *Contemporary Educational Psychology*, *35*(4), 264–279. doi:10.1016/j.cedpsych.2010.04.004
Makara, K., & Madjar, N. (2015). The role of goal structures and peer climate in trajectories of social achievement goals during high school. *Developmental Psychology*, *51*(4), 473–488. doi:10.1037/a0038801
Marsh, H. W., Craven, R. G., & Hinkley, J. (2003). Evaluation of the big-two-factor theory of academic motivation orientations: An evaluation of jingle-jangle fallacies. *Multivariate Behavioral Research*, *38*(2), 189–224. doi:10.1207/S15327906MBR3802_3
McInerney, D. M. (2004). A discussion of future time perspective. *Educational Psychology Review, 16,* 141–151.
McInerney, D. M., & Ali, J. (2006). Multidimensional and hierarchical assessment of school motivation: Cross-cultural validation. *Educational Psychology*, *26*(6), 717–734. doi:10.1080/01443410500342559
Midgley, C., Kaplan, A., & Middleton, M. (2001). Performance-approach goals: Good for what, for whom, under what circumstances, and at what cost? *Journal of Educational Psychology*, *93*(1), 77–86. doi:10.1037/0022-0663.93.1.77
Midgley, C., Maehr, M. L., Hicks, L., Roeser, R., Urdan, T., Anderman, E., Kaplan, A., & Middleton, M. (1997). *Patterns of adaptive learning survey (PALS)*. University of Michigan.
Poortvliet, M., & Darnon, C. (2010). Toward a more social understanding of achievement goals: The interpersonal effects of mastery and performance goals. *Current Directions in Psychological Science*, *19*(5), 324–328. doi:10.1177/0963721410383246
Rasch, G. (1980). *Probabilistic models fore some intelligence and attainment tests* (Copenhagen, Danish Institute for Educational Research). Expanded edition (1980) with foreword and afterword by Benjamin D. Wright. The University of Chicago Press. (Original work published 1960)
Ryan, A. M., Hicks, L., & Midgley, C. (1997). Social goals, academic goals, and avoiding seeking help in the classroom. *The Journal of Early Adolescence*, *17*(2), 152–171. doi:10.1177/0272431697017002003
Ryan, A., & Shim, S. (2006). Social achievement goals: The Nature and consequences of different orientations toward social competence. *Personality and Social Psychology Bulletin*, *32*(9), 1246–1263. doi:10.1177/0146167206289345
Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education: Theory, research and application* (3rd ed.). Merrill.
Selya, A. S., Rose, J. S., Dierker, L. C., Hedeker, D., & Mermelstein, R. J. (2012). A practical guide to calculating Cohen's f^2, a measure of local effect size, from PROC MIXED. *Frontiers in Psychology*, *3*(111), 1–6.
Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, *75*(3), 417–453.
Skolverket. (2009). *Vad påverkar resultaten i svensk grundskola? Kunskapsöversikt om betydelsen av olika faktorer* [What influeces the achievement results in Swedish compulsory school?].
Svensson, A. (2011). Utvärdering genom uppföljning. Longitudinell individforskning under ett halvsekel [Evaluation through follow up. Longitudinal individual research during half a century]. *Acta Universitatis Gotoburgensis*.
Urdan, T. (2004). Predictors of acedmic self-handicapping and achievement: Examining achievement goals, classroom goal structures, and culture. *Journal of Educational Psychology*, *96*(2), 251–264. doi:10.1037/0022-0663.96.2.251

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal-contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist*, *41*(1), 19–31. doi:10.1207/s15326985ep4101_4

Wentzel, K. R. (1993). Motivation and achievement in early adolescence: The role of multiple classroom goals. *The Journal of Early Adolescence*, *13*(1), 4–20. doi:10.1177/0272431693013001001

Wentzel, K. R. (1996). Social and academic motivation in middle school: Concurrent and long-term relations to academic effort. *The Journal of Early Adolescence*, *16*(4), 390–406. doi:10.1177/0272431696016004002

Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, *90*(2), 202–209. doi:10.1037/0022-0663.90.2.202

Yang Hansen, K., & Gustafsson, J.-E. (2019). Identifying the key source of deteriorating educational equity in Sweden between 1998 and 2014. *International Journal of Educational Research*, *93*, 79–90. doi:10.1016/j.ijer.2018.09.012