Motivation goals during adolescence: A cross-sectional perspective

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Goal theory perspectives on motivation are at the forefront of research regarding adolescents' motivation in learning contexts, focusing on the purposes (both academic and social) individuals perceive for engaging in achievement related behaviour. Much research however, has focused on early adolescence, meaning there is limited research regarding late adolescence or the relevance of particular goals as students mature. This study examines the achievement and social goals of secondary school students at early and late adolescence, using quantitative and qualitative data to explore differences in goals and goal relationships at each age level. Participants were 128 junior (ages 12-13) and 67 senior (ages 15-17) students from two metropolitan secondary schools in Western Australia. Results showed that junior students scored higher than senior students on all achievement goals and relationship goals, yet there were no significant differences between the groups for status and responsibility goals. In addition, mastery, relationship and responsibility goals were related for junior, but not for senior students. Implications for future research are discussed.

Introduction

The motivation of adolescents in learning contexts has emerged as an important issue of educational research over the last 20 years (Nicholls, Patashnick, & Nolen, 1985; Pajares & Urdan, 2002). Because adolescence is a time of change and preparation for adulthood, and because academic achievement at this time can have significant implications on employment or career opportunities, understanding adolescents' motivation is vital to ensuring students achieve their potential in school. A useful way of understanding student motivation has been to investigate the purposes for students' achievement behaviour through the goals they pursue in learning situations. Indeed, goal theory (Ames, 1992; Ames & Archer, 1988) has become one of the most prominent theories of motivation research over the last three decades. Adopting a goal theory perspective research has generated a wealth of understandings about why students might want to achieve at school as well as the individual and contextual factors that are critical to success.

Goal theorists have investigated both the achievement goals (Ames & Archer, 1988; Elliot, 1999) and the social goals (L. H. Anderman, 1999b; Urdan & Maehr, 1995) that influence adolescents' motivation at school. Research shows that adolescents are concerned about developing and demonstrating competence (achievement goals) and that social goals to form relationships, demonstrate responsibility and achieve status within the peer group also influence students' motivation. Even so, much research has engaged participants who are early adolescents or tertiary students and there are few studies focusing on students during late adolescence. Consequently there is a limited

understanding of for example, whether the achievement goals endorsed by early adolescents are equally relevant to adolescents at the end of their school careers? Similarly, are the social goals students pursue equally important during both stages? The purpose of this research is to investigate the academic and social goals' pursued by early (12-13 year old) and late (15-17 year old) adolescents attending secondary school and to examine similarities and differences in the goals pursued at each level. Focusing on the goals of students at early and late adolescence, this study contributes to the existing literature by providing insights into the relationships between goals of students at both these stages.

Achievement goals and social goals

Research regarding the achievement goals (Ames, 1992; Dweck & Leggett, 1988; Elliot, 1997) and social goals (L. H. Anderman & Anderman, 1999; Wentzel, 1991) of individuals in learning situations has been important to develop understandings about the reasons why students want to achieve in particular learning contexts. Achievement goals have centred on the construct of competence, with students either striving to develop competence (mastery goals) or demonstrate competence (performance goals). Extensive research regarding performance goals (Elliot, 1997; 1999) has shown that students can aim to demonstrate high levels of competence relative to others (performance approach goals) or aim to avoid demonstration of low levels of competence relative to others (performance avoidance goals). Research has consistently shown the positive effects of mastery goals on learning and achievement (Elliot, McGregor & Gable, 1999; Pintrich & Schunk, 1996), whereas the results for performance goals have been less consistent (Kaplan & Maehr, 2007). Performance approach goals have been associated with adaptive learning behaviours such as investment of effort, persistence and successful exam performance (Elliot, McGregor & Gable, 1999), yet have also been linked to superficial learning strategies such as memorisation, rote learning, avoidance of help seeking and challenging tasks (Elliot, McGregor, & Gable, 1999; Middleton & Midgley, 1997).

Social goals have been investigated from both a content perspective i.e. what social goals are students trying to achieve at school (Wentzel, 1991) and the social goals students pursue with regard to their school achievement (i.e. for what social reasons do students aim to succeed at school). Such goals include responsibility (desire to comply with the social requirements of the classroom, including following rules and instructions), relationships (desire to form and maintain good friendships at school) and status (desire for acceptance and status within the peer group) (L. H. Anderman & Anderman, 1999).

Although much research has focused on either achievement goals or social goals, increasingly researchers are finding that using a multiple goals perspective (Boekaerts, de Koning, & Vedder, 2006; Dowson & McInerney, 2003; Levy-Tossman, Kaplan, & Assor, 2007; Mansfield, 2009; Wosnitza & Volet, 2009) allows investigation of the relationships between particular goals and how these might influence achievement and learning behaviours. With regard possible relationships between achievement and social goals, interesting findings have emerged. For example, in a study of 5th and 6th

grade students (in the United States) L.H. Anderman and Anderman (1999) found that responsibility goals were associated with mastery goals, so that students who aimed to develop competence in their academic work were also likely to follow rules and expectations in the school environment. They also found a positive relationship between performance, relationship and status goals, meaning that students aiming to demonstrate competence were also likely to focus on developing relationships at school and attaining status in their peer group. These findings have been well supported in the literature and other studies have explored relationships between academic motivation and social relationships (L. H. Anderman, 1999a; Levy-Tossman, Kaplan, & Assor, 2007; Patrick, Anderman, & Ryan, 2002). The majority of this research, however, has relied exclusively on survey measures to explore relationships and has focused on students during early adolescence (L. H. Anderman & Kaplan, 2008). Questions remain about the relationship between social and achievement goals for students as they reach late adolescence.

Motivation during adolescence

Investigating changes in motivation has become an area of emerging research interest (Turner & Patrick, 2008). Much research in the US context shows declines in achievement motivation for adolescents (E. M. Anderman & Midgley, 1997; L. H. Anderman & Anderman, 1999; Eccles & Midgley, 1989) during transition from elementary to middle schools. Specifically some research has shown an increase in performance approach goals and decrease in mastery goals over transition (Anderman & Anderman, 1999). These changes have been explained by the change in school environment particularly when students move from a more mastery focused environment to one where academic performance has a greater emphasis. A number of recent studies have also shown changes in adolescents' motivation during an academic year (see for example, Bong, 2005; Corpus, McClintic-Gilbert, & Hayenga, 2009; Shim, Ryan, & Anderson, 2008). Other researchers such as Yeung and McInerney (2005) have investigated changes in goal orientations in students aged 12-18 in a Hong Kong context, where using data gathered at one time point, findings were that the level of motivation of the 7th grade students was significantly higher than that of the 9th grade students, which again was higher than the level of motivation of the 11th grade students. Using this type of cross-sectional approach is important for unveiling trends, such as the gradual decline of motivation levels, that then can be followed up and developed in future research. In Australia, there has been little research investigating motivational goals of adolescents at different periods of their school careers.

While there is evidence, at least in other countries, that there are differences in students' goals at various stages of schooling, there is also evidence of goal stability. For example, Middleton, Midgley and Kaplan (2004) found that goal orientations in mathematics were moderately stable between 6th and 7th grade. Wolters, Yu and Pintrich (1996) also found moderate to high stability of goals of 7th and 8th grade students from start to end of academic year in Maths, English and Social Studies. In one Australian study of final year students goal orientations were found to be a stable construct when scores from the start of the year to prior final exams were considered (Smith, 2004). In each of these longitudinal studies showing goal stability, the data

were collected within a 12 month period, the greatest time being between consecutive spring seasons (Middleton, Kaplan, & Midgley, 2004). Few studies have examined goal stability over a greater period of time.

As there is evidence that dimensions of a learning context can have a powerful impact on students' goals, it would seem reasonable that there may be differences in goal emphases between early and late adolescence. During this time schools typically increase emphasis on final year results, and indeed at the time of this study, junior students experienced outcomes-based curriculum, whereas senior students experienced more traditional tertiary entrance focused curriculum. Along with developmental changes that occur during adolescence it is possible that goals will have different structures or relevance at different stages of schooling, yet few studies have investigated this issue. Specifically, there has been little research investigating goal differences during adolescence in the Australian context.

Given this context and the ongoing discussion in the literature regarding academic and social goals during adolescence, this study uses a cross-sectional design to investigate the differences or similarities of achievement and social goals of students during early and late adolescence.

The following research questions are addressed.

1. How do junior and senior secondary students differ with regard to their achievement goals and social goals?
2. What relationships might emerge between achievement and social goals for junior and senior secondary students?

Methodology

Participants

The participants in this study were 128 junior (age 12-13, 62 male, 66 female) and 67 senior (age 15-17, 27 male, 40 female) secondary students attending two secondary schools (one independent, one government) in low to middle income, ethnically diverse areas in metropolitan Western Australia. Participants were volunteers from the respective year groups.

Data collection and instruments

Participants completed a motivation survey mid-way through their academic year. The survey contained open ended questions, rating style questions (see also Mansfield, 2010), achievement goal and social goals scales. Scales for measuring achievement and social goals were adopted from the Patterns of Adaptive Learning revised scales (Midgley et al., 2000) and from L. H. Anderman and Anderman (1999). The achievement goals scales measured mastery, performance approach and performance avoidance goals. The social goals scales measured three goals related to the social reasons for achievement, those being relationship, responsibility and status goals.

Students responded by circling a number between 1 and 5, with 1 being not at all true, 3 being somewhat true and 5 being very true.

After responding to the scaled items for achievement goals, students rated six of the items as either very important, important, or not important. The six items equally represented mastery goals (e.g. "it is important to me that I learn and understand new concepts this year), performance approach goals (e.g. "it is important to me that I look smart in comparison to other students in my class) and performance avoidance goals (e.g. "it is important to me that I avoid looking like I have trouble doing the work"). Students then wrote explanations about why they had rated items in a particular way. This activity was designed to elicit students' explanations about why particular goals were more important than others. Similarly, after responding to the scaled items for social goals, students completed the same style activity this time using statements representing relationship (e.g. "it is important to me that I form one or two really close friendships at school"), responsibility (e.g. "it is important to me that I follow class rules") and status goals (e.g. "it is important to me that I fit in with the popular group at school"). For the purposes of this paper, students' explanations about the relative importance of particular goals are used to help explain some of the findings in the quantitative data.

Data analysis

Quantitative analysis

Both instruments showed a similar reliability structure to the originally published instruments (Anderman, 1999; Midgley, et al., 2000). The Cronbach's alphas for the achievement goals range between $\alpha=.69$ and $\alpha=.85$. The lowest alpha was for performance avoidance which was in the original instrument $\alpha=.74$ and therefore only slightly better than in this study. For the social goals of relationship and responsibility, the alphas were slightly higher in this study. The alpha of the status goal scale was lower than in the original study where it was $\alpha=.70$ and with its $\alpha=.59$ just in the range to be acceptable for further analysis. However crucial results that are related to status have to be interpreted with care (see Table 1).

For each scale, a scale average was calculated. The resulting six scale-measures entered the analysis. The data underwent independent sample t-tests to compare junior and senior students and canonical correlations to find out if and how a relationship between social and achievement goals exists.

Qualitative analysis

Data from students' explanations about the importance of achievement and social goals was coded according to each goal and its importance. For example, three codes were used for mastery goals, those being mastery-very important (Mvi), mastery-important (Mi), and mastery-not important (Mni). The same system was used for the other five goals. Next, each of these categories was further defined according to whether the statement was made by a junior or senior student (for example, Mvi comments became

MviJ or MviS). These allocated codes were used to explore the findings from the quantitative data.

Table 1: Scale reliabilities

	M	SD	No of items	Cronbach's alpha
Achievement goals				
Mastery	21.5	3.18	5	.82
Performance approach	13.1	4.5	5	.85
Performance avoidance	11.1	3.7	4	.69
Social goals				
Relationship	32.2	4.7	8	.77
Responsibility	19.4	3.9	5	.87
Status	8.6	3.1	4	.59

In addition to the coding of students' comments according to goal, goal importance and year level, percentages were calculated to show the percentage of students from each year level rating goals at the three levels of importance. These percentages are only used in this paper to show trends which are then supported by students' explanations.

Results

As the qualitative data in this study is used to further explain findings from the quantitative data, the quantitative data with regard to each research question is presented first, followed by a summary of key points which are then elaborated by qualitative findings.

Research question 1: How do junior and senior secondary students differ with regard to their achievement goals and social goals?

The quantitative data shows differences in the achievement goals and some social goals pursued by junior and senior secondary students.

As shown in Table 2 below, the achievement goal of *mastery,* and the social goals of *relationship* and *responsibility* are relevant goals for both groups. On the other hand *status, performance* and *avoidance goals* were not as relevant for both groups of students.

Group differences between junior and senior students were examined using independent sample t-tests. The tests showed significant differences between the two groups of students (junior, senior) for *mastery goals* (junior: *M*=4.40, *SD*=.59; senior: *M*=3.91, *SD*=.74; *p*=.000), *performance approach goals* (junior: *M*= 2.75, *SD*=.88; senior: *M*=2.35, *SD*=.87; *p*=.003), *performance avoidance goals* (junior: *M*=2.91, *SD*=.91; senior: *M* =2.45, *SD* =.86; *p* =.001) and *relationship goals* (junior: *M* =4.10, *SD* =.61; senior: *M* =3.88, *SD* =.52; *p* =.011). Interestingly, for every goal the junior

students rated the relevance of the goal higher than the senior students. Cohen's d for each significant difference shows strong to moderate effects between d=.732 and d= .388. The strongest effect was found for *mastery goals* where the average mean difference is $M_A=.49$. There were no significant differences for *status* and *responsibility*.

Table 2: Junior vs. senior students: Achievement goals and social goals

	Junior	Senior	t	df	p	Cohen's d
Achievement goals						
Mastery	M=4.40, SD =.59	M=3.91 SD =.74	-5.026	193	.000	.732
Performance approach	M= 2.75, SD =.88	M=2.35, SD =.87	-3.003	193	.003	.457
Performance avoidance	M=2.91, SD=.91	M=2.45, SD=.86	-3.440	193	.001	.519
Social goals						
Relationship	M=4.10, SD =.61	M=3.88, SD =.52	-2.46	193	.011	.388
Responsibility	M=3.93 SD =.77	M=3.74 SD =.75	-1.69	193	.092	.250
Status	M=2.19 SD =.73	M=2.08 SD =.85	-.966	193	.335	.139

Research question 2: What relationships might emerge between achievement and social goals for junior and senior secondary students?

The relationship between achievement goals and social goals was examined using a canonical correlation analysis where one set of variables consisted of achievement goals (mastery, performance approach, performance avoidance) and the other of social goals (relationship, responsibility, status). Two of three possible roots were significant (R_1=.47, chi^2=61.63, df=9, p=.00; R_2=.25, chi^2=14.58, df=4, p=.005; R_3=.10, chi^2=1.87, df=1, p=.17). According to Warmbrod (2003) any canonical weight greater than r=.3 is meaningful. Therefore, when examining the first canonical root, mastery goals (r=.91), relationship (r=.36) and responsibility (r=.84) were the only meaningful variables for this root. Consequently, the correlation between achievement goal orientation and social goals of (R=.46) is defined by mastery goals on the one side and responsibility and relationship on the other side, where responsibility has a strong contribution to this correlation and relationship has a weaker contribution.

The second root, which involves six types of goals, however, explains only 6% of the variance. The correlation between achievement goals and social goals (R=.25) is defined by a positive contribution of performance approach (r=.76) and performance avoidance (r=.32), moderated by a negative influence of mastery (r=-.53) on the one side. On the other side the positive contribution of relationship (r=-.52) and status (r=.66) is moderated by a negative contribution of responsibility (r = .-45). According

to this result the main part of the variance is explained by the relation presented in root 1 of the canonical correlation (see Figure 1).

mastery — Root1: r = .91 / Root2: r = -.53
performance — Root1: r = .13 / Root2: r = .76
avoidance — Root1: r = .12 / Root2: r = .32
Root1: *R* = .47, *p* = .00 / Root2: *R* = .25, *p* = .01
relation — Root1: r = .36 / Root2: r = .52
responsibility — Root1: r = .84 / Root2: r = -.45
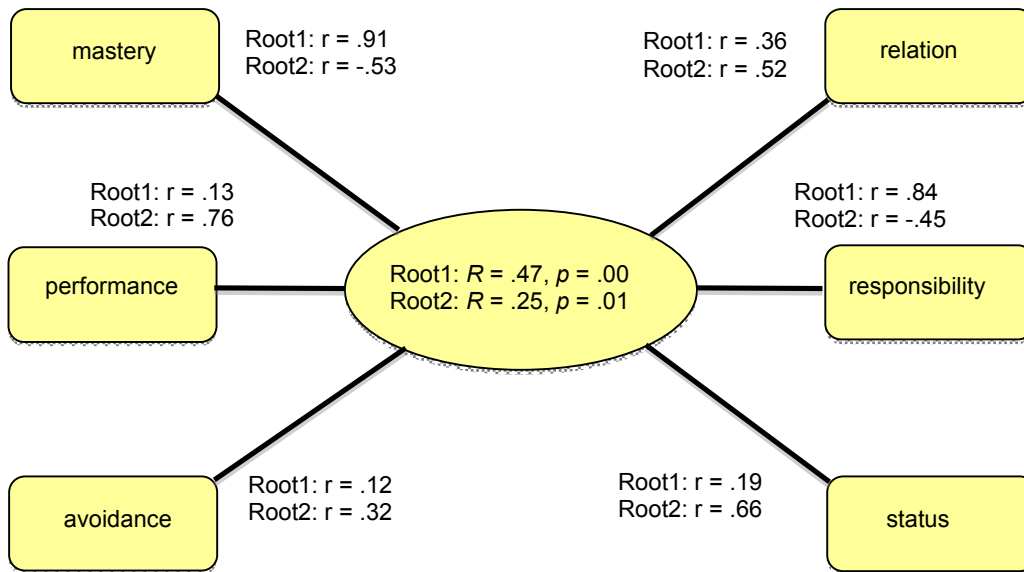status — Root1: r = .19 / Root2: r = .66

Figure 1: Canonical correlation: All students

Since there were differences between the group means of the junior and senior students we also expected a difference in the relationship structure of the two groups. For the junior students the structure is very similar to the overall canonical correlation (see Figure 2).
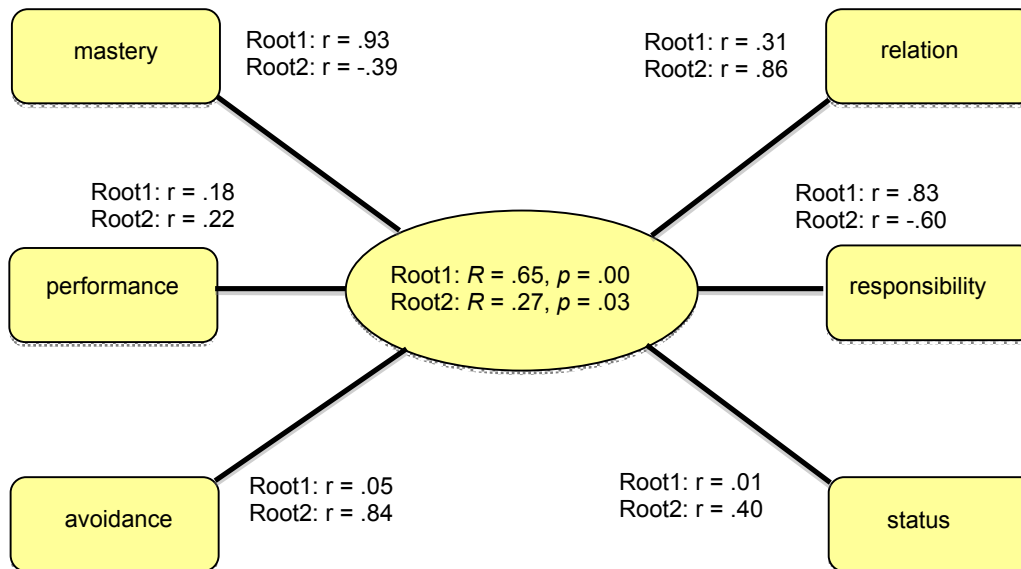
mastery — Root1: r = .93 / Root2: r = -.39
performance — Root1: r = .18 / Root2: r = .22
avoidance — Root1: r = .05 / Root2: r = .84
Root1: *R* = .65, *p* = .00 / Root2: *R* = .27, *p* = .03
relation — Root1: r = .31 / Root2: r = .86
responsibility — Root1: r = .83 / Root2: r = -.60
status — Root1: r = .01 / Root2: r = .40

Figure 2: Canonical correlation: Junior students

Two of three possible roots were significant (R_1=.65, chi^2=77.77, df=9, p<.00; R_2=.27, chi^2=10.59, df=4, p=.03; R_3=.10, chi^2=1.15, df=1, p=.28). When examining the first canonical root, mastery goals (r=.93), relationship goals (r=.31) and responsibility goals (r=.83) were the only meaningful variables for this root meaning that the correlation between achievement goal orientation and social goals of (R=.65) is defined by mastery goals on the one side and a strong contribution of responsibility and a weaker contribution of relationship on the other side.

The second root, which involves five types of goals, however explains only 7% of the variance. The correlation between achievement goal orientation and social goals (R=.27) is defined by a strong positive contribution of avoidance (r=.84) and a negative contribution of mastery (r=-.39) on the one side and positive contribution of relationship (r=.86) and status (r=.40), moderated by a negative contribution of responsibility (r=.-60) on the other side.

Similar to the overall analysis, the main part of the variance is explained by the relation presented in root 1 of the canonical correlation.

Interestingly while the junior students show a strong relationship between achievement and social goals, the senior students show no significant correlation at all *(R=.32, chi^2=7.66, df=9, p= .57).*

Summary of quantitative findings

The results from the quantitative analysis show three key findings. Firstly, junior students scored significantly higher than senior students for all achievement goals – mastery, performance approach and performance avoidance. Secondly, junior students scored significantly higher than senior students on relationship goals, whereas there were no significant differences between the groups for status and responsibility goals. Finally, there is a relationship between mastery and relationship and responsibility goals for junior students but not for the senior students.

Explanation of quantitative findings using qualitative data

The finding that junior students scored higher than senior students on all achievement goals is reflected in the rating activity and in the comments they made about why mastery goals were important. Table 3 shows the percentages of junior and senior students who rated the achievement goals in each of the three ways. More junior than senior students rated each of these goals as very important.

Table 3: Achievement goal ratings: Junior and senior students

	Mastery		Performance approach		Performance avoidance	
	Junior	Senior	Junior	Senior	Junior	Senior
Very important	91%	84%	7%	4%	8%	6%
Important	8%	13%	23%	14%	29%	9%
Not important	1%	3%	70%	82%	63%	85%

These ratings were supported by students' comments where they explained why they had rated mastery goals as very important. The majority of explanations included reference to a desire for learning and improvement which is typical of mastery goals. The explanations, however, were able to shed some light on other reasons why mastery goals were so important, such as the belief that learning and improvement would have a positive impact on achievement and future opportunities, positive wellbeing (feeling happy, satisfied, positive self-esteem), and approval from parents and teachers.

> I go to school to learn and improve in new areas (junior 47)
> To learn new concepts this year is really important to me because I must learn to improve my school work (junior 08)
> I want to learn new things and it is important because I need skills to get into a career (senior 18)
> If I want to have a future where I can support myself and be independent and happy I need to improve all the time to help my future aspirations (senior 31)

These explanations suggest that pursuit of mastery goals may be also associated with pursuit of other goals, including future goals and wellbeing goals.

The finding that junior students also scored higher on performance approach and avoidance goals is reflected in the rating activity (and shown in Table 3) where more junior students than senior students rated performance approach goals as either very important or important.

> I think it is good that others think I look smart because it also makes me feel good, it motivates me (junior 48)

Likewise, juniors also rated performance avoidance goals as very important or important.

> I don't want people to think that I'm dumb, I don't want students and teachers to think that I'm really struggling in school (junior 77)

Given that performance goals involve social comparison whereby students either aim to demonstrate high levels of competence (approach) and/or avoid demonstrating low levels of competence (avoidance) it seems reasonable to expect that these goals might be more evident in students when they enter a new learning context, as these students had. It seemed that for the senior students, however, there was a clear rejection of goals involving social comparison. 85% of the senior students rated approach and avoidance goals as not important, compared to 63% of juniors. Such comments gave reasons that emphasised the future and self-satisfaction.

> What others think doesn't matter. I concentrate on my work only and how I'm achieving because it's going to be my career. It's my future (senior 04)
> I don't like comparing myself with others because everyone has different capabilities. I don't care if others think I'm having trouble because if I am then I need help (senior 34)
> How I compare to others doesn't matter because the only person I'm competing against is myself (senior 16)

These explanations suggest that as students become older and indeed, are very familiar with their learning context (including the school and the peer group), social comparison may become less important. Interestingly, in both groups there were also comments about the advantages of others seeing students having trouble, namely, that they would be helped by teachers or peers.

> If I look like I'm doing well when I'm not, people won't be able to help me and then I could really fail (junior 17)
> If I don't understand I say it because then it gets explained and it sinks in better (senior 13)
> If I don't understand something, I have no problem admitting to it, and looking a little dumb: it means that I have shelved my pride, asked for help, and can then do better (senior 24)

The finding that junior students endorsed relationship goals more strongly than senior students is reflected in Table 4 which shows the percentage of junior and senior students who rated social goals in each of the three ways. To an extent such a finding might be expected, given their relative stages of schooling. Indeed some junior students saw this as a critical time for forming "friendships to last through school and later life" (junior 45). Junior students were concerned about establishing relationships to help support them through the next five years of schooling and beyond. Furthermore, these students had mostly come from different primary schools and were still becoming familiar with other students in their year group. Forming relationships was very much at the forefront of many students' minds. On the other hand, senior students were more concerned about maintaining rather than forming new friendships, particularly those that may stay with them in the years beyond school.

> I believe close friends are important because they offer support and guidance now and in the future (senior 03)
> I want to have my friends when I leave school (senior 18)
> It's good to get along with everyone and I want to because that way we're all friends and even after school we can remain friends (senior 21)

Table 4: Social goal ratings: Junior and senior students

	Relationships		Responsibility		Status	
	Junior	Senior	Junior	Senior	Junior	Senior
Very important	74%	63%	50%	21%	0%	4%
Important	22%	31%	45%	58%	32%	15%
Not important	4%	6%	5%	21%	68%	81%

Interestingly, no significant differences were found between the groups for responsibility and status goals, yet the rating results suggest that responsibility was very important for more junior than senior students. This may be in part explained by the actual statements the students were rating ("I follow class rules" and "I keep quiet while other kids are trying to study") whereas in the survey students responded to 5 items about responsibility. Another explanation, however, may be that as students are becoming accustomed to a new learning environment they are more aware of new rules

and the expectation that they comply with the demands of the new academic and peer environment.

The final key finding from the quantitative data was that a relationship exists between mastery, relationship and responsibility goals for junior students. These relationships were supported by the qualitative data, both in the students' explanations and in the number of students who rated each of these goals as very important. Furthermore, the qualitative data help explain the relationships further by showing that students perceived causal relationships between these goals.

For example, 61% of juniors rated mastery and relationships as very important. These students also explained that relationships were important so they could help and support each other in learning. In addition, students perceived that the formation of relationships enabled them to learn more effectively.

> A good social relationship at school can work wonders for you're academic marks. It makes you have greater self-esteem (junior 70)
> I don't want to worry about not having friends when I'm doing my work (junior 71)

In this way there appeared to be a bi-directional relationship between these goals whereby striving for one goal would support the other goal and vice versa.

Similarly, 45% of juniors rated mastery and responsibility statements as very important, particularly when it came to their own and others' learning.

> I want to learn and so I don't want to disturb others' learning (junior 39)
> Everyone's trying to learn at school. I don't want to spoil it for others (junior 47)
> I think it's not fair that if I be noisy and others want to study they can't learn and get good grades (junior 01)

Relationship and responsibility goals were rated very important by 33% of juniors and they explained that following rules that respected others was important for maintaining good relationships. Again, striving for one goal assisted possible achievement of the other.

> I need to get along with everyone and make some good friends. I need to follow class rules so I can get along with people and respect them. Then they will be my friends (junior 78)

Finally, 33% of juniors rated all these three goals as very important, confirming the relationship between wanting to learn, wanting to comply with the demands of the learning situation and wanting to form and maintain friendships. Students' explanations show that there is a bi-directional and possibly three way relationship between these goals (whereby responsibility and forming relationships will contribute to learning and improvement) which may enhance the strength of the goals in particular learning situations.

Discussion

This study examined achievement and social goals of early and late adolescents to investigate differences in goal emphases between the two groups and to explore relationships that might emerge between goals.

The study provides evidence that junior and senior students differ in their endorsement of particular achievement goals and social goals, namely, mastery, performance approach, performance avoidance and relationship goals. The key difference in this study, however, was that junior students rated the relevance of the goal higher than senior students. The finding that junior students score higher on all goals scales than senior students suggests that how younger students respond to such survey items may differ from the way in which older students are inclined to respond. Similarly, Bong (2009) found that young children "expressed stronger endorsements to all other achievement goals, compared with their older counterparts" (p. 891). Bong argues that younger children tend to "provide higher ratings on survey items" (p. 891), especially prior to developing differentiated conceptions of ability, at approximately ages 10-11 (Nicholls, 1984). Interestingly, the junior students in this study were aged 12-13, suggesting that either such conceptions were still developing or that the context in which the students were learning supported mastery, rather than performance goals. The extent to which learning contexts support particular goals and the impact this may have on students' conceptions of ability is an interesting issue for further research.

While there were differences for the four goals mentioned above, there was no significant difference for responsibility and status goals between the groups. Students endorsed responsibility goals in both forms of data and similarly rejected the importance of status goals. Junior and senior students both remarked that the need to fit in with a particular peer group was not important to them. This clear rejection of status goals along with endorsement of mastery and relationship goals reflects associations between these goals found in other studies (L. H. Anderman, 1999a; L. H. Anderman & Anderman, 1999; Levy-Tossman, Kaplan, & Assor, 2007; Levy, Kaplan, & Patrick, 2004). Although the extent to which these goals may have been promoted (or otherwise) in the school environments was not fully investigated in this study, the consistency with which students in both schools responded suggests that there may have been some broader social or cultural variables that influenced students' goals in this regard. A close examination of how contextual variables may influence such results is an important issue for future research.

The relationship between mastery, relationship and responsibility goals for junior students is supported by both qualitative and quantitative data in this study. The particular value of the qualitative data, however, lies in explaining how these goals are related and that bi-directional and possible three-way relationships exist between the goals. While positive associations between mastery, responsibility and relationship goals for early adolescents have been established in the literature (L. H. Anderman & Anderman, 1999), there is very limited research exploring relationships between these goals for older adolescents. It seems that for the senior students of this study, social goals and mastery goals are independent from each other, a finding that is unique in the

available literature. Since the study was not specifically designed to identify reasons for an absence of relationship between these goals, it can only be speculated that for older students at the end of their secondary schooling, peer groups in schools are becoming less relevant and consequently, the relationship between social goals and achievement goals is becoming less relevant. Future studies are needed to explore this inconsistency and ascertain whether or not this finding is generalisable. If so, the reasons for the differences in relationships between goals during early and late adolescence need further investigation. Nevertheless, the absence of a relationship in this study reflects again the results shown by other studies that not only goals (Anderman & Midgley, 1997; Bong, 2009) but also goal structures can be different in different age groups.

Finally, the qualitative data explaining why particular goals were important revealed comments in which students alluded to other goals such as future and wellbeing goals. While these other goals are not the focus of the present paper, the comments do suggest that other goals may influence and perhaps underpin specific achievement and social goals. Although future goals have been the focus of some recent research (Malka & Covington, 2005; Phalet, Andriessen, & Lens, 2004) the extent to which they may have a positive impact on achievement or social goals during adolescence is an issue that requires further research.

Conclusion

This study contributes to the ongoing research about the goals of adolescents in learning contexts by showing differences in goals between early and late adolescence and identifying associations between goals. The study supports recent research involving multiple goals (Boekaerts, de Koning, & Vedder, 2006; Dowson & McInerney, 2003; Mansfield, 2009; Pintrich, 2000; Wosnitza & Volet, 2009) and illustrates that considering adolescents' achievement goals, social goals and the relationships between the two across the years of secondary schooling, can further develop understandings about adolescents' motivation for educators and researchers. While the study is limited in its collection of data at one time point only using pre-determined achievement and social goals, there are findings that can be further explored through longitudinal studies. Further research should consider other goals (for example, future goals) that influence students' academic engagement, and continue to adopt a multiple goals perspective, identifying patterns of multiple goals that positively influence students' academic and social success at different stages of adolescence.

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