Sex and Age Differences in Achievement Goal Orientations in Turkish Adolescents

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Abstract

Culture plays an important role in the achievement goal orientations of students, which may vary as they progress through their lifespan. However, research examining achievement goal orientations in the Turkish cultural context is scarce. Based on contextual and developmental theories, the aim of this study was to examine sex and age differences in achievement goal orientations in Turkish high school students. Participants consisted of 386 female and 250 male high school students (61% female, M=15.67 yrs; SD=1.22) who completed the 2x2 Achievement Goal Orientation Scale. Two way analyses of variance were used to test the research hypotheses. Study results suggested that there was no difference between boys and girls in achievement goal orientation dimensions; however, older students were more likely to less mastery and performance approach oriented than younger students. Based on contextual and developmental theories, some cultural factors related to achievement goal orientations in Turkish high school students were discussed and future studies were recommended.

Keywords: Achievement goal orientations, high school students, sex, age, Turkey.

Introduction

The aim of this study was to examine sex and age differences in achievement goal orientations in Turkish high school students. Researchers have long been interested in students' motivational factors in academic settings. Among the important motivational factors associated with students' learning is their achievement goal orientations, which have been defined as the aims or reasons for which a person engages in achievement behavior (Elliot & Thrash, 2001). Historically, researchers developed models, including two, three, four, and six dimensional models, to conceptualize the achievement goals of students. In the present study, we focused on a four dimensional model of achievement goal orientations, in other words the 2x2 Achievement Goal Orientation model.

According to the 2x2 Achievement Goal Orientation model (Elliot & McGregor, 2001), people have four distinct orientations depending on the personal or social standards they use to approach success or avoid failure. These orientations are the mastery approach, mastery avoidance, performance approach, and performance avoidance. While the mastery approach and mastery avoidance consist of learning achievement goals, the performance approach and performance avoidance make up performance achievement goals. Generally, people oriented towards learning achievement goals tend to focus on their own learning standards or understanding their work, personal development, and the objectives of learning, while those with performance achievement goals generally exceed the standards of others, and tend to demonstrate skills that are superior to those of others (Ames, 1992; Meece, Anderman, & Anderman, 2006). More specifically, the mastery approach is characterized by striving to master a task, develop intrapersonal competence, and acquire new knowledge or skills. People oriented towards the mastery approach tend to strive for success by taking into account their own personal specialization in a particular task and use their qualifications to improve proficiency by exerting a high level of effort. The mastery avoidance approach is characterized by the belief that one should strive to avoid intrapersonal incompetence. People oriented towards the mastery avoidance approach tend to focus on improving on their previous performance. They have a tendency to be emotional and anxious and have intense fears about failure. While mastery orientations focus on intrapersonal competence, performance orientations center on normative/interpersonal competence. For instance, the performance approach is characterized by the belief that one should make great efforts to do better than others. Those oriented towards the performance

have higher success needs, care about competency, use surface learning strategies, are competitive, and need the approval of others. They define their success in relation to that of others. Lastly, performance avoidance is made distinctive by the belief that one should strive to avoid doing worse than others. People oriented towards this approach tend to have higher anxiety, are emotional, and use surface learning strategies (Elliot & McGregor, 2001).

Different types of achievement goal orientations are differentially correlated with motivational, cognitive, and behavioral outcomes as well as academic achievement (Elliot & McGregor, 2001; Steinmayr, Bipp, & Spinath, 2011; Wigfield & Cambria, 2010). For example, Steinmayr et al. (2011) found that the mastery approach, performance approach, and performance avoidance goal orientations predicted grade point average (GPA) beyond intelligence, and mastery goal orientation also predicted GPA beyond intelligence and big five personality traits. In an extensive literature review, Wigfield and Cambria (2010) also noted that students' goal orientations correlated with task values in different academic settings as well as intrinsic and extrinsic values. Given that achievement goal orientations are associated with motivational, cognitive, and behavioral outcomes, investigating factors correlated with students' achievement goal orientations may provide significant implications for educational policies, including instructional, curricular, and administrative decision making and practices. Moreover, understanding factors correlated with students' achievement goal orientations may also provide more nuanced interventions for increasing students' motivation in academic settings.

Different theories have emerged to explain sex and age differences in the achievement goal orientations of students. Specifically, these theories can be divided into biological and social categories. Biological theories posit that sex differences in motivation, in particular, and personality traits, in general, are behind the genetic dispositions or hormonal differences (Steinmayr & Spinath, 2008). Social theories contend that sex differences in personality traits, including achievement goal orientations, originate from social, cultural, and contextual factors (Eagly & Wood, 1999).One social theory relevant to this study, social role model theory, posits that sex differences in psychological traits stem from socialization experiences. According to this model, cultural values influence how female and male students behave, think, and feel and most sex differences are supposed to be a result of sex role socializations (Schmitt, Realo, Voracek, & Allik, 2008).This approach purports that observed differences in psychological traits, including achievement goal orientations, are directly related to specified sex roles for men and women or social and cultural expectations. From the point of view this model, it is anticipated that when men and women hold similar social and cultural expectations, sex differences in psychological traits are more likely to diminish. This model also predicts that gender egalitarian cultures may lessen the sex differences in observed psychological traits, whereas in traditional cultures they may increase. However, although theoretical prediction purports no difference in achievement goal orientations in gender egalitarian cultures, such as Spanish, American, Dutch, and Australian cultures, support for this theory is mixed.

In a sample of Spanish adolescents aged 12 to 16, Murcia, Gimeno, and Coll (2008) found that males had higher mastery approach goal orientations than females. Dekker et al. (2013) examined Dutch adolescents aged 10–19 years old from primary and secondary schools and found that girls were more likely to adopt mastery and performance avoidance approaches than boys, whereas boys were more likely to use the performance approach than girls. Freudenthaler, Spinath, and Neubauer (2008) reported that boys are more likely to employ the performance approach and performance avoidance goals than girls in a large sample of Australian general secondary school students. However, Guan, Xiang, McBride, and Bruene (2006) reported no sex difference between achievement goal orientations in a sample of high school students from the southwestern United States. Differences in results cannot only be attributed to sample differences (Meece, Glienke, & Burg, 2006) and/or divergent assessment instruments (Dekker et al., 2013), but may also indicate social, cultural, and contextual factors at work. Taken together, much of the available evidence on sex differences is inconsistent and requires further investigation

Studies examining age-related changes in achievement goal orientations in children and adolescents focus on developmental and contextual theories to explain changes in goal orientations (Wigfield & Cambria, 2010). Developmental theorists (e.g., Nicholls, 1990) posit that younger children, especially those in elementary schools, are unable to distinguish the difference between ability and effort. In the elementary school years, students believe that intelligent students are those making a great deal of effort. However, with cognitive development, older students easily segregate effort and ability and believe that students who try to exert a lot of effort to accomplish a task are in fact less intelligent. Other developmental theorists (Dweck & Leggett, 1988) make a distinction related to students' ability or intelligence views. According to Dweck and Leggett (1988), students have two different views about their abilities, namely entity and incremental views. Students who have adopted entity views believe that their abilities are constant, and students with incremental views believe that

their abilities can be improved through their efforts. Thus, from the point of view this theory, students with an entity view of ability are more likely to adopt a performance goal orientation and students with an incremental view of ability are more likely to adopt a mastery goal orientation.

Developmental theorists (Dweck & Leggett, 1988; Nicholls, 1990) also posit that although students generally begin elementary school with mastery goal orientation, they become progressively more performance oriented as they move through upper grades. Theorists focusing on contextual variables take into account the instructional contexts and how they can affect students' goal orientations in schools (Wigfield & Cambria, 2010). Researchers specifically emphasized the difference in classroom and school goal culture to explain the reasons for changes in achievement goal orientations (Meece, Anderman, & Anderman, 2006). Specifically, a school environment emphasizing improving skills and learning may positively affect some students' master achievement goals and motivation, whereas school environments focusing on competition and demonstrating skills that are superior to those of other students may make some students more performance oriented and decrease their motivation (Meece, Anderman, et al., 2006).

Cross-sectional studies examining age-related differences in divergent student cohorts have shown that elementary school students were higher in mastery approach goal orientation than middle school students (Leondari & Gialamas, 2002) or showed no difference (Liu, 2003), and middle schools students were also higher in mastery goal orientation than high school students (Gonida, Kiosseoglou, & Voulala, 2007).With respect to performance approach goals, similar to mastery goal orientations, researchers found that middle school students were higher in performance approach goals than high school students (Gonida et al., 2007). Performance avoidance goals also tend to lessen between middle school and high school (Leondari & Gialamas, 2002). However, there are at least two obvious limitations in the studies mentioned above. They compared students from different educational levels, such as junior high school, middle high school, and senior high school. However, students' achievement goal orientations may change within a school year or across specific education levels as a function of age (Dweck & Leggett, 1988). Secondly, because these studies included individuals of different developmental stages, such as early (Liu, 2003), middle, or late adolescence (Gonida et al., 2007), they may overlook specific changes within specific developmental stages, such as middle adolescence. Thus, examining achievement goal orientations within the same educational level may reveal more detailed changes in achievement goal orientations in a specific developmental stage. However, to the best of the authors' knowledge, only one study by Guan et al. (2006) examined the changes in achievement goal orientations in American high school students and reported no difference between grade levels.

Although the transition from secondary school to high school is often associated with negative changes in achievement goal orientations (Gonida et al., 2007; Leondari & Gialamas, 2002), positive culture specific contextual changes in the school environment also exist, such as incentives and opportunities (Liu, 2003). Thus, new students (ninth grade) can be more mastery oriented as the new high school curriculum with new lessons provides opportunities to improve their knowledge and skills. It can also make them more performance oriented by encouraging them to be better than others so as to demonstrate their skills to their classmates (Meece, Anderman, et al., 2006). On the other hand, older students may experience a general decline in their achievement goal motivations so as to evaluate more comprehensively their abilities as briefly outlined above (Dweck & Leggett, 1988).

Drawing from theoretical and empirical literature, as well as the specific Turkish cultural context, we expected that there would be no significance difference between girls and boys in achievement goal orientations. However, for age, we expected a general decline in the mastery approach, performance approach, and performance avoidance goal orientations in high school students. We also expected no age differences in the mastery avoidance goal orientation.

Method

2.1. Participants

Participants in this study were selected using convenience sampling. They were attending two different typical mid-sized public Anatolian high schools in the Central Black Sea Region of Turkey. The two schools were similar in terms of their physical properties, such as class size, school size, as well as average achievement of students and school curriculum. There were 386 female (61%) and 250 male (39%) students who ranged in age from 14 to 18 yrs. with a mean age of 15.67 yrs. (SD=1.22). Of the 636 students, approximately 39% (n=251) were in freshmen year, 24% (n=152) were in sophomore year, 15% (n=94) were in junior year, and 22% (n=139) were in senior year.

2.2. Measures

Demographics. A personal information form was used to collect information about the students' backgrounds. They answered questions about their school, sex, age, and grade level.

2x2 Achievement Goal Orientation Scale. Students' general achievement goal orientations were measured by the 2x2 Achievement Goal Orientation Scale developed by Akın (2006) in the context of the Turkish culture. Although Elliot and McGregor's (2001) original 2x2 Achievement Goal Orientation Scale and the subsequently revised version (Elliot & Murayama, 2008) have been adapted into the Turkish language, the only available measure when we developed our questionnaire was Akın's (2006) 2x2 Achievement Goal Scale. This scale measures general achievement goal orientations using Elliot and McGregor's (2001) theoretical framework and consists of 26 items and 4 subscales, namely mastery approach (MA), mastery avoidance (MAv), performance approach (PA), and performance avoidance (PAv). Respondents indicate their answers on a five-point scale ranging from *Never* (1) to *Always* (5). Higher scores reflect greater endorsement of the related approach. Participants' responses to related subscales were averaged to calculate their corresponding subscale score. Akın (2006) conducted a principal component analysis with varimax rotation on undergraduate students' responses on the 2x2 Achievement Goal Orientation Scale and demonstrated four factor structure in line with Elliot and McGregor's (2001) theoretical framework. The explained total variance ranged between 8.37% (PAv) and 28.43% (MA).Three-week test-retest reliability scores were found to be r=.77 for MA, r=.82 for MAv, r=.84 for PA, and r=.86 for PAv. Akın (2006) also reported the estimates of internal consistency (Cronbach Alpha) as .92 for the MA, .97 for MAv, .97 for PA, and .95 for PAv subscale in this sample. Recently, Erdem-Keklik and Keklik (2013) performed a confirmatory factor analysis to investigate whether Akın's (2006) recommended four factor structure fit high school students' responses and found that four factor structure was a good fit to the data (χ^2/df: 3.02, Root Mean Squared Error of Approximation (RMSEA): .07, Comparative Fit Index (CFI): .93). The Cronbach Alpha reliability estimates for the current sample was .70 for the MA (8 items), .54 for MAv (5 items), .74 for PA (7 items), and .54 for PAv (6 items) subscale. Although the reliabilities were low for the MAv and PAv subscales, measurement experts suggest that researchers can retain subscales that have reliability estimates as low as .50 without weakening validity coefficients (Schmitt, 1996). Additionally, given the limited number of items forming the MAv and PAv subscales, the internal consistency observed can be marginally accepted (Hair, Black, Babin, & Anderson, 2014). A sample item from MA is "The opportunities to help improve my skills are very important for me."; MAv is "I experience fears related to fully learning my lessons."; PA is "One of my most important goals is to seem more intelligent than others."; and PAv is "I'm worried about the possibility of getting a bad grade in class."

2.3. Procedure

This study was conducted during the first semester of the school year between December 2014 and February 2015. Trained graduate students collected the data from the students for course credit during a master education class. Students were not compensated for their participation. After the approval of the participating schools, students completed the paper and pencil format measures in the presence of a school teacher during their regular class hours. Students provided written informed consent for participating in the study and were informed that participation was voluntary, the responses would be kept confidential, data would not be used for any purposes other than research, and they could withdraw before, during, or after the study without any repercussions. All students participated voluntarily in this study and completed the measures in approximately 20 minutes.

2.4. Statistical Analyses

All statistical analyses were carried out with SPSS 23 for Windows. Descriptive statistics were calculated for information about sample characteristics. Mean and standard deviation were also calculated to examine differences in achievement goal orientations of students with respect to their sex and age. Some respondents did not complete all demographic items or the achievement goal orientation scale (*n*=10), and thus were excluded from the data set using list-wise deletion. Two univariate outliers were detected and excluded from the dataset (Tabachnick & Fidell, 2012). In order to test the research hypotheses, a series of two-way analyses of variance (ANOVAs) were performed to examine possible mean score differences across sex and age groups. When two-way ANOVA statistical analysis results were significant, post-hoc comparisons were performed using the conservative Scheffe test. Instead of using multivariate analysis of variance (MANOVA),we deliberately used this approach because previous research has shown that correlations between achievement goal orientation dimensions are low (Elliot & McGregor, 2001; Elliot & Murayama, 2008). Pituch and Stevens (2016) recommend the use of MANOVA when the dependent variables are moderately correlated so as to increase power and effectively control Type I errors in statistical analysis. All statistical assumptions, including adequate

sample size, normality, and homogeneity of variance, were tenable (Ho, 2013). An alpha level of .05 was used for all statistical tests.

Table I Descriptive Statistics

Variable	MA			MAv		PA		PAv	
	n	M	SD	M	SD	M	SD	M	SD
Sex									
Girl	386	4.07	.61	3.35	.77	3.11	.88	2.97	.77
Boy	250	4.01	.56	3.25	.80	3.18	.89	2.97	.81
Age									
14	137	4.19_a	.54	3.44	.80	3.25_a	.82	3.09	.83
15	167	4.12_a	.51	3.37	.76	3.34_a	.82	3.07	.75
16	139	4.00	.62	3.19	.75	3.25_a	.93	2.95	.76
17	157	3.87_b	.63	3.25	.78	2.83_b	.86	2.85	.80
18	36	4.05	.63	3.30	.91	2.61_b	.82	2.69	.74

Note. Each number with a subscript in the means indicates a group difference: a > b

Results

Table 1 shows achievement goal orientation dimension means and standard deviations with respect to sex and age. A series of two way ANOVAs were conducted to examine mean differences between achievement goal orientation dimensions with respect to sex and age and results are shown in Table 2.

Table II Two Way Analysis of Variance Results for Achievement Goal Orientation Dimensions

Source	df	MS	F	p	E.S
MA					
Sex (A)	1	.01	.02	.893	.00
Age (B)	4	1.65	4.89	.001**	.03
A×B	4	.49	1.46	.214	.01
Error	626	.38			
MAv					
Sex (A)	1	.00	.01	.937	.00
Age (B)	4	.87	1.45	.217	.01
A×B	4	1.14	1.88	.112	.01
Error	626	.60			
PA					
Sex (A)	1	.15	.21	.645	.00
Age (B)	4	8.29	11.39	.001**	.07
A×B	4	.94	1.29	.274	.01
Error	626	.73			
PAv					
Sex (A)	1	.01	.01	.913	.00
Age (B)	4	1.79	2.93	.020*	.02
A×B	4	.29	.47	.761	.00
Error	626	.61			

Note. MA=mastery approach; MAv= mastery avoidance; PA= performance approach; PAv= performance avoidance; MS=Mean squares; E.S= effect size, partial η^2; *p<.05, **p<.001.

All sex by age interactions as well as the main effects of sex were not significant in achievement goal orientation dimensions. However, the main effect of age was significant for MA (F (4, 626)=4.89, $p<$ .001, partial η^2=.03), PA (F (4, 626)=11.39, $p<$ .001, partial η^2=.07), and PAv (F (4, 626) = 2.93, $p<$ .05, partial η^2 = .02) scores. Post-hoc Scheffe comparisons showed that 17 year old students (*M*=3.87, *SD*=.63) had significantly lower mastery approach scores than 14 years old (*M*=4.19, *SD*=.54) and 15 years old (*M*=4.12, *SD*=.51) students. There was no statistically significant difference in other age groups. The post-hoc Scheffe test regarding the performance approach scores also showed that 17 year old (*M*=2.83, *SD*=.86)and 18 year old (*M*=2.83, *SD*=.86) students had significantly lower performance approach scores than 14 year old (*M*=3.25,

SD=.82), 15 year old (M=3.34, SD=.82), or 16 year old (M=3.25, SD=.93) students. There was no statistically significant difference in other age groups. Lastly, the post-hoc Scheffe test regarding the performance avoidance scores revealed no significant differences among age groups. These results may be attributed to increased power related to sample size because effect size related to PAv scores was very small.

Discussion

This study investigated students' achievements goal orientations with respect to sex and age. In line with social role theory predictions related to the Turkish cultural context, which emphasize similar motivations for achievement in children from the early years of education, our study results showed no significant differences in boys and girls. These results are in line with some previous studies examining sex differences in achievement goal orientations (Guan et al., 2006) but not all (Dekker et al., 2013; Freudenthaler et al., 2008; Murcia et al., 2008). According to social role theory, egalitarian cultures may diminish the sex differences in observed psychological traits such as achievement goal orientations. Although Turkey is not an egalitarian culture for boys and girls, the observed differences for girls are mostly related to stricter social control, such as girls spend most of their time at home with their mothers, whereas boys spend it outside with peers (Yildirim, 1997). Given the limited opportunities to selected high schools and tertiary education in a competitive academic environment for most children, Turkish families put strong emphasis on academic achievement and expect their children to be successful students and constantly motivate them to work hard from the early years of education for a better future career. Thus, girls and boys share many common values in this socialization process in Turkey. However, different results obtained in egalitarian cultures and traditional cultures emphasize that other contextual factors, such as school achievement goal orientation, may play a significant role in these differences. Moreover, all these research results show that sex may affect achievement goal orientations in different ways at different stages of adolescence and in different cultures.

Our study suggested that older students' mastery and performance approach orientations were significantly lower than those of younger students. This result is inconsistent with Guan et al. (2006) who reported no difference in achievement goal orientations with age. However, our results are consistent with developmental and contextual theories. According to contextual theories (Meece et al., 2006), school achievement goal orientation in particular, and in the Turkish social context in general, may play an important role in students' achievement goal orientations. In Turkey, primary school students begin to prepare for unpaid boarding schools and the scholarship exam, which takes place at the end of the primary school years. They prepare themselves for the transition exam from secondary education to high school education (TEOG) in the secondary school years, and in the high school years, they prepare for the student selection and placement exam (OSS) for university. Every year, approximately 1,300,000 students take the transition exam from secondary education to high school education and over 2,200,000 students apply for the student selection and placement exam. Only a small percentage of these students advance to the best high schools (e.g., High School of Science, High School of Social Sciences, Health Vocational High School) and four-year degree bachelor programs, which offer good opportunities for public employment. Therefore, in these harsh economic conditions, lower employment levels as well as a limited number of places at good universities and departments, which offer high probabilities of employment as a civil servant in public institutions, and therefore prestige in the Turkish community, make high school students more anxious as well as more achievement oriented. Thus, this high level of competition at several times in the students' academic progress make students less motivated and more pessimistic about their future. Moreover, although the transition from middle to high school is often associated with negative changes in achievement goal orientations (Gonida et al., 2007),the cultural context may affect these changes by providing different incentives and opportunities (Meece et al., 2006).

Specifically, as an incentive, beginning a new school and selecting a major in future grades may make younger students more mastery and performance approach oriented than older students. Additionally, as an opportunity, younger students may be more motivated by starting a new school to add new achievements to their previous success and may be more motivated to learn new things and try to demonstrate better performance in front of their classmates. Another explanation might be that, as developmental theorists (Dweck & Leggett, 1988) posit, with cognitive maturity, older students evaluate the current situation, more realistically and possible more pessimistically, and consequently, we observed a general decline in their mastery and performance approach goals.

As there are some limitations in this study, the results should be interpreted with caution and direct future research. First, some of the outcomes may be specific only to the Turkish educational context, which could limit the generalizability of the results. Second, this research was conducted with a limited number of

students in two different high schools located in two city centers of Turkey's Central Black Sea Region. For this reason, the external validity of our study is low because the experiences of high school students in these urban settings may not extend to high school students in more rural or remote settings or in metropolitan centers across Turkey. Therefore, the inclusion of a more representative sample of high school students, including those from other types of high schools (e.g., High School of Science, School of Social Sciences, etc.) and other parts of Turkey, may be useful. Third, this study employed a cross-sectional design. Although cross-sectional research designs provide information about the current situation in the studied sample the causal link between the findings cannot be established, but possible risk factors or protective factors can be understood (Çer & Şahin, 2016a, 2016b). Therefore, in future studies, carrying out longitudinal and experimental studies with this sample may be useful. Fourth, information from adolescents in this study was collected through self-report measures. Self-report scales can lead to a number of general method biases, such as mid-point responding and social desirability (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, an attempt was made to prevent bias by asking the adolescents to keep their identities confidential (Podsakoff et al., 2003). Receiving information from different sources of information (parents, close friends, and teachers) to assess these variables may be useful in future studies.

Despite these limitations, the current study presents important information for understanding more fully the demographic factors contributing to the achievement goal orientations of Turkish high school students and some inconsistent demographic findings in the achievement goal orientation literature. Specifically, our study results stress that school counseling services that attempt to identify students with different achievement goal orientations should consider students' age. Additionally, high school teachers should particularly focus on motivating upper grade level students to increase their learning outcomes during regular class hours. Lastly, in order to design evidence-based motivational intervention programs for high school students, researchers should consider factors such as age.

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