

SOCIAL BACKGROUND EFFECTS AND ACADEMIC ACHIEVEMENT DURING TRANSITION TO HIGH SCHOOL

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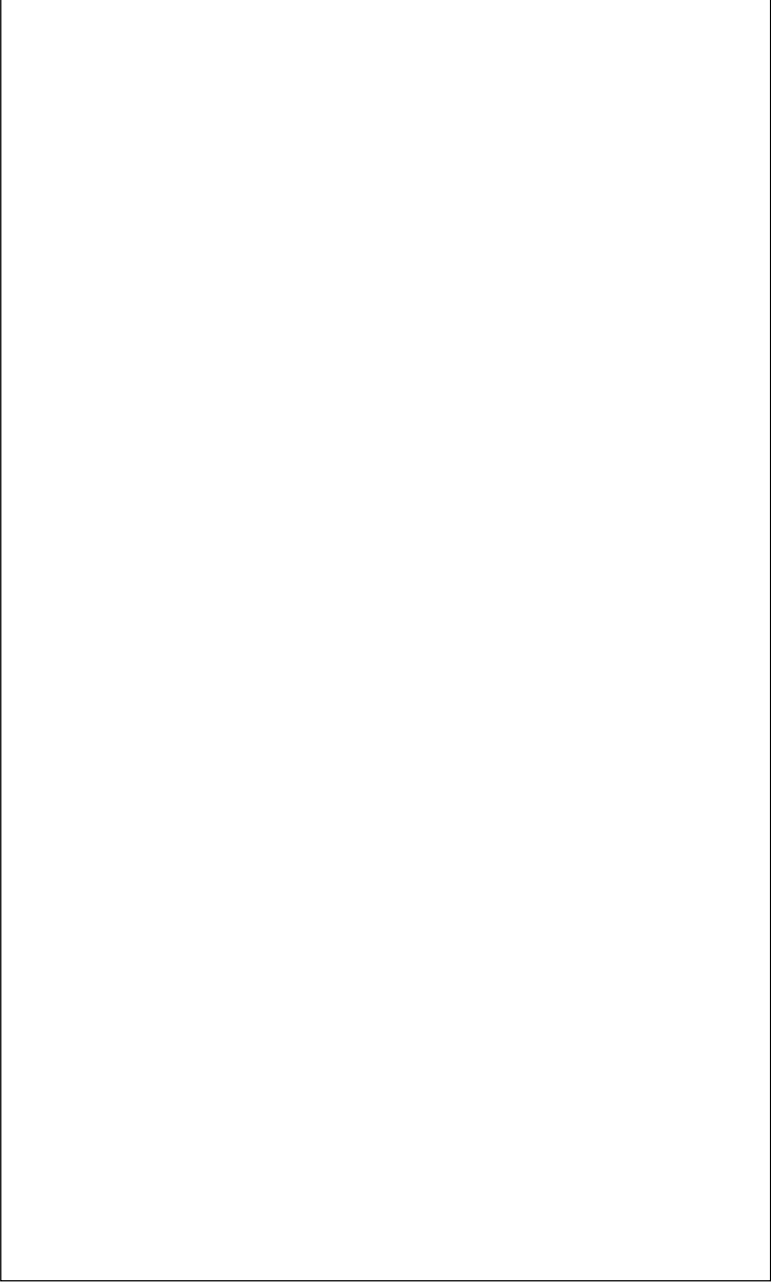
Abstract – *The study analyzes the factors that influence student transitions to high school, overall high school achievement, math, science, as well as verbal achievement. The sample included students in an Aegean city, Canakkale. The Sample (N=572) included 14 high schools, with the exception of two high schools in this town. The study found little or no effect of SES on academic achievement. Previous academic achievement was positively associated with academic achievement. School type (vocational or general) and attending preparatory schools were negatively associated with academic achievement. Student aspirations were positively associated with academic achievement. Parental involvement did not have consistent effects on academic achievement.*

Social background effects and academic achievement in transition to high school

There have been two lines of inquiry concerning student social background effects around secondary schooling. The first one assumes students' entry into a program is both a cause and effect of academic achievement (Gamoran & Mare, 1989) and entrance into college (Rosenbaum, 1980). The second line of inquiry views educational attainment as sequential transitions. The proponents of this perspective view student flow based on yes/no decisions whether a student continues or drops out of school. By doing that, researchers hope to differentiate where the social background effects are the strongest (Shavit & Blossfeld, 1993). According to advocates of this approach, social background effects are lower in transition to college while they are the strongest in transition to high school. Lucas (2001) argues that these effects constitute a universal pattern.

Models that investigate factors that affect academic achievement usually take structural, student attitudes, and behavioral variables (Jaeger, 1993; Pugh, 1976). Student educational aspirations and evaluations of their own ability have been among the most important determinants of academic achievement. Favorable attitudes regarding educational attainment lead to greater effort and achievement while unfavorable attitudes lead to lowered anticipations and less effort among the low SES students (Coleman, 1991).

TABLE 1: Studies on Academic Achievement



One of the widely accepted findings in the literature is that the best predictor of offspring's educational attainment is parental educational level (Coleman, 1988; McNeal, 1999). This finding is consistent across different studies using various theoretical perspectives. However, school effects literature understates the effects of family and cultural factors thereby overstating the effects of schooling (Fuller & Clarke, 1994).

Gender is an important factor in predicting academic achievement. An IEA study reveals that in eight of nine countries girls (at age 14) outperformed boys in reading achievement. However, they later lag behind since there has been pressure on them regarding labor and childbearing (Fuller & Clarke, 1994). Heyneman & Loxley (1983) found lower family effects in science achievement in 29 countries. Schools relatively have less influence on language and reading achievement.

The review of six studies in the literature that spans over 25 years (see Table 1 below) provides little support for SES and academic achievement (Bogenschneider & Steinberg, 1994; Glewe & Jacoby, 1983; Heyneman, 1976; Ho Sui Chu & Willms, 1996; Karweit, 1976; Lee & Smith, 1995; Pugh, 1976). One study reported lower academic achievement in middle class children whose mother work (Bogenschneider & Steinberg, 1994). One study concluded that SES works through parental involvement (Ho Sui Chu & Willms, 1996). Another study reported that restructuring leads to higher academic achievement and this is not related to SES – rather it was a result of systemic restructuring efforts (Lee & Smith, 1995). Glewe & Jacoby (1983) reported that while the mother's educational level has a positive influence, that of the father had no effect.

While there is support for the view that parental involvement leads to improved academic achievement (Coleman, 1991; Epstein, 1991), other research indicates parental involvement is associated with lower levels of achievement (Horn & West, 1992), or does not effect academic achievement (Epstein, 1991; Keith 1991). In McNeal's (1999, p.118) view, 'The variation in levels of parental involvement by gender and social class, as well as the variation in *how* parental involvement affects achievement, may be one potential explanation for these inconsistent findings.'

As in most developing countries, education is a more crucial factor for social mobility such as Turkey than in industrialized societies. There are a variety of schools (See Table 2 for some of these various schools) in Turkey and these schools create additional differences (Sozer, 1997). Kose (1995) used Bourdieu's notion of cultural capital to test whether the unequal distribution of cultural capital among social class and groups influence access to higher education in 1990s. Kose found that family SES and cultural factors play an

important role in access to higher education, and that social and cultural factors are more important than school effects regarding academic achievement when transitioning to higher education, that family-school-preparatory schools influence academic achievement, and that the fathers of most successful students in university placement exams were academics, bureaucrats, and technical staff. The mothers of these students were high school or, in some cases, college graduates. These successful students came from upper middle class. The findings suggested that SES was not an independent factor that exerts a statistically significant influence on academic achievement independent of social and cultural characteristics of family. Thus, Kose argued that family social and cultural factors are more important in 'determining' access to college than economic factors.

In another study, Kose (1997) investigated the academic achievement of students in 1995 University Entrance Exam. He looked at public high schools, private high schools (both medium of instruction was in English and Turkish), religious vocational high schools, and Anatolian High Schools. Specifically, Kose investigated the relationship between verbal ability, quantitative ability, and courses in verbal, math, physics, chemistry, biology, history, geography, philosophy, as well as foreign language. The author found that students from Fen Lisesi (from science high school), Anatolian High Schools, and private high school graduates fill the best spots in the University Entrance Exam.

Recently, there has been a policy change that is likely to influence the entrance college in Turkey. The University Entrance Exam results are no longer the sole determinant of student placement into a program in higher education. In addition, a school level GPA has also an influence. A student receives extra credit if s/he chooses a department which is the extension of his/her high school department in higher education. For example, a graduate from a fine arts high school who chooses to enter a fine arts college at a university receives extra credit when compared to a student who graduated from a general high school. Therefore, currently the type of high school a student attends largely determines whether s/he will be admitted to college. There is little or no research in Turkey that looks at the transition from elementary school to high school. This study focuses on the transition from elementary school (grades 6-8) to high school.

The importance of the study stems from the following characteristics: (1) there little or no work that examine transition into high school in Turkey; (2) the study focuses on in-depth analysis of various types of high schools such as both general schools and vocational schools; (3) the study considers the effects of parental involvement on academic achievement in Turkey.

TABLE 2: High Schools, Students, and Percentage of Student in the Sample

All High Schools in the City of Canakkale	Total Student Population		Included in the Sample	
	Freshman		Freshman	
	Total # of Students	# of Classes	# of Students	Cumulative %
Canakkale Lisesi (General)	451	10	188	21.5
Ibrahim Bodur Lisesi (General)	355	9	129	14.8
Ibrahim Kutlu Lisesi (General)	61	2	44	5.0
Canakkale Anadolu Lisesi (General)	379	9	80	9.2
Fen Lisesi (General)	48	2	45	5.0
Anadolu Güzel Sanatlar Lisesi (Vocational)	70	2	55	6.3
Ozel Lise (Private General)*	16	3	–	–
Endustri Meslek Lisesi (Vocational)	338	11	120	14
Anadolu Teknik Lisesi (Vocational)	24	1	9	1.0
Kız Meslek Lisesi (Vocational for Girls)	89	3	35	4.0
Anadolu Teknik Meslek Lisesi (Vocational)	18	1	9	1.0
Ticaret Meslek Lisesi (Vocational)	189	6	40	4.0
Anadolu Ticaret Meslek Lisesi (Vocational)	46	2	35	4.0
Anad. Turizm ve Otel. Mes. Lis. (Vocational)	39	2	40	4.6
Imam Hatip Lisesi (Vocational)*	–	–	–	–
Anadolu Imam Hatip Lisesi (Vocational)*	6	1	–	–
Saglık Meslek Lisesi (Vocational)			45	5.2
TOTAL			873	94.6

* Due to low number of enrollment these schools were not included in the study

Sample and Methods

Participants and Instrument

Convenience sampling procedure was used in this study. Located in the Aegean Sea and on the Dardanelles straits, Canakkale is a city with a population of approximately 75,000. The study included all the high schools with the

exception of two in the city of Canakkale in the Northwestern Turkey. These schools were excluded because of the low number of students they catered for. One of the schools excluded was the only private school and overall less than 2% of students go to private schools in Turkey. The second high school excluded is a religious vocational high school, and it was not considered in this study because of the sharp decline in enrollment. Both schools are less likely to attract students in the near future. Depending on the size of school one or more classes were surveyed. The data includes 873 freshman high school students surveyed in 14 high schools in the summer of 2001. Depending on the size of the student population, one or two classes from each school were included in the sample. The sample is described in detail in Table 2.

The instrument developed by the author included 80 questions regarding student background characteristics, previous school achievement, academic achievement, guidance in the elementary school, parental involvement, and future aspirations.

The descriptive statistics for the sample were as follows: 52% of the students were male, 47% female, 60% of mothers completed primary schooling, 12% completed elementary schooling, 17% high schools, and 8% college degree, and 2% completed graduate degrees. On the other hand, 40% of fathers completed primary schooling, 17% elementary schooling, 25% high schools, 16% college, and 1% completed graduate degrees. Students reported that 27% of the families live in rural areas. Finally, 62% of the students were enrolled in general high schools while 38 % were in vocational high schools.

Measures and Analyses

Three types of variables were used for data analysis in this study, namely background variables, academic and personal variables, and parental involvement variables. Table 3 provides the item and factor descriptions as well as reliabilities.

T-tests were used to determine whether there are differences between group means regarding the variables under investigation in this study. The sample included in t-tests was 772 students. Further, OLS regressions were used to predict what factors influence academic achievement.

Factor analysis with promax rotation was performed. Factors with given values greater than 1 were used to create variables. Then, Cronbach Alpha reliabilities were checked. Guidance, parent-school relationship, parent-child discussion of school activities created following the results of factor analysis. Guidance includes questions whether a student was informed about his/her choices. Parent-school relationships included parental involvement with school officials, teachers, PTOs, and parents of other students. Parent-child discussion of

school activities includes questions regarding discussions of school activities with parents as well as parental help and monitoring homework and student activities.

OLS regressions were used to determine the factors that influence academic achievement. Regressions included 572 students. Four OLS regressions were run. The dependent variables were academic achievement (students overall GPA), student grades in Math, Science, and Verbal (Literature). Independent variables were gender, living in an urban environment, elementary school GPA, school type (general or vocational), school size, whether a student attended to preparatory courses, mothers and fathers education as an SES measure, student self report of ability, aspiration, ideal profession, and weekly study time. Guidance, parent-school relationship, and parent-child discussion of school were the independent variables created using the results of factors analysis.

Students provided information on their elementary and current school grades, which served as our index of academic achievement. Educators argue that student grades measure future academic progress and future success better than standardized tests because they reflect teacher judgments on how students think and solve problems (Dornbush, Ritter, Leiderman, Roberts, & Farleigh, 1987). Moreover, the correlations between self-reported GPAs and actual GPAs tend to be high (Bogenschneider & Steinberg, 1994).

Parental level of education was used as a measure of SES. Students were asked to indicate the highest level of education by each parent. Categories were primary school, elementary school (grades 6-8), high school, community college, college, and graduate degree. Parental education is considered as the most stable component of a family's social class. Other composite measures such as income and occupation fluctuates more and therefore they are found to be less stable (Bogenschneider & Steinberg, 1994).

Results

The results of t-tests (see Table 4) suggest that there were differences regarding gender, living in an urban area, mothers educational level, and fathers educational level between low and high achievement students as manifested by their overall GPA in high schools in Canakkale, Turkey.

Among academic variables, there were significant differences based on t-tests between high and low achieving students. These differences were the largest regarding graduating GPA in elementary school. Mathematics grades followed the graduating GPA. Also, there were differences regarding quantitative ability as denoted by student self evaluation of himself/herself, and verbal ability of students.

TABLE 3: Description of Factors

Item Description

Academic Achievement – responses include the student responses about the subject areas during their senior year in elementary school.

(1=0-2.49 2=2.0-3.49 3=3.50-4.49 4= 4.50-5.00)

Graduating GPA

Literature

Math

Science

Civics

History

Drawing

Music

Pyhsical Ed

Alpha Reliability = .87

Parent-School Relationship – responses indicating whether parents contacted with the following individuals during elementary school.

(1= None 2=Once 3= Twice 4=Three times 5=Four or more times)

PTA

Student Status

Classroom Teacher

Principal

Parents of other Students

Alpha Reliability = .54

Monitoring (Parent-Child Discussion of School) – responses indicating whether parents helped with the following during elementary school.

(1= Never 2=Sometimes 3=Often 4=Always)

Courses

Tutored

Controlled Student Study

Student Grades

Helped with homework

Limits the hrs Watching TV

Study Hours in a Week

Alpha Reliability = .74

Guidance – responses indicating how influential the student guided by the following during elementary school.

(1=None 2=Little 3=Some influence 4=Very influential)

Mother

Family

Counselor

Classroom Teacher

School Administration

Preparatory School

Alpha Reliability = .64

Gender – a single item indicating the gender of student (1= male, 0=female).

Urban – a single item indicates whether a student lives in urban or rural area (1=urban, 0= rural).

School Type – a single item whether student attends to a general or vocational high school (1=vocational, 0= general).

School Size – a single item indicates whether a school is large or small (1=less than 500 students, 0=higher than 500 students).

Preparatory Courses – a single item indicates whether a student attended preparatory courses for high school (1= attended, 0= did not attend).

Mothers' Education – a single item indicates mothers level of education (1=less than high school, 2 = high school, 3= college or graduate).

Fathers' Education – a single item indicates fathers level of education (1=less than high school, 2= high school, 3= college or graduate degree).

Ability – a single item indicates given students ability which profession does he/she thinks will be successful require which level of education? (1= primary, 2=secondary, 3= high school, 4= Community college, 5= college, and 6= graduate education).

Aspiration – Given students grades, how likely you will reach the profession in your ideal? (1= impossible, 2= difficult but not impossible, 3= easy, 4= quite easy).

Ideal Occupational Preference – An open ended question asking students about their vocational aspirations and the type of scores required in University Selection Examination (1=Quantitative, 2=Social Sciences).

Hours studied (Weekly) – a single item measures how many hours does the student studies (1=1-3 hours, 2=4-6 hours, 3=7-9 hours, 4= 10 hours or more).

TABLE 4: The Results of T-test comparisons Regarding Low and High Academic Achievement (N=773)

Items	T-Value
<i>Background Variables</i>	
Gender	5.22***
Urban	2.31*
Family Income	1.82
Mother's Education	2.93**
Father's Education	3.68***
<i>Academic Variables</i>	
Verbal	3.50***
Quantitative	9.25***
Mechanical	1.93
Math	13.85***
Social	2.05*
Literature	1.84
Arts	0.24
Music	1.44
Graduating GPA (Elementary grades 6-8)	16.84***
<i>Parental Involvement Variables</i>	
Guidance	6.42***
Parent-Child Discussion of School	0.33
Parent-School Relationship	1.97*
Tutoring at Home with Homework	0.62
Parental Monitoring of Homework	4.27***

*** p<.001, **p<.01, *p<.05

Finally, there were significant differences between high and low achieving students regarding whether they received guidance in elementary school and the variables related to parental involvement. The largest difference was in guidance. Parental monitoring of homework and parent school relationship follows guidance. The results of t-tests show that there are differences between high and low academic achieving students.

The results of OLS regression with overall academic achievement as the dependent variable reported in Table 5. Among the background characteristics, only graduating GPA (.23***) from elementary school was positively associated with overall academic achievement. Being male, attending to a vocational high school, and receiving preparatory courses were negatively associated with academic achievement (-.15***, -.20***, and -.17*** respectively). Living in an urban environment and school size did not have a statistically significant effect on student achievement.

Inconsistent with the literature, SES as measured by parental (fathers and mothers) education level was not significantly related to academic achievement. Student ability (.14***) and having an ideal profession (.07*) were positively associated with student achievement.

TABLE 5: Results of OLS Regression (DV= Academic Achievement) – N=572

Independent Variables	Coefficients			
	Standardized	Unstandardized	SE	t
<i>Background Characteristics</i>				
Gender (Males)	-.15***	-.20***	.05	4.30***
Urban	-.02	-.01	.07	0.16
Graduating GPA	.23***	.95***	.14	6.88***
School Type (Vocational)	-.20***	-.28***	.05	5.59***
School Size (Small)	.04	.08	.05	.25
Preparatory Courses	-.17***	-.24***	.05	4.51***
Mothers' Education	.05	.05	.04	.18
Fathers's Education	-.01	-.08	.04	-.23
Ability	.14***	.06***	.01	4.23***
Aspiration	.03	.03	.04	.82
Ideal Profession	.07*	.03*	.04	1.94*
Hours Studied (Week)	-.05	.03	.02	.12
Guidance	.11**	.12**	.04	3.11**
Parent-School Relationship	.72*	.04*	.02	2.09*
Parent-Child Discussion of School	-.07	-.08	.04	1.84

*** p<.001, **p<.01, p<.05

R-squared = .28

Consistent with previous research, parent school relationship positively associated with overall academic achievement. It is the largest predictor (.77*) of academic achievement. Receiving guidance in elementary school (grades 6-8) was also positively associated with academic achievement. Overall, the model explains % 28 of the variance ($R^2 = .28$) in predicting overall student achievement as manifested by student grades.

Table 6 reports the result of OLS regression with Math as the dependent variable. Consistent with previous literature, students' previous academic achievement (.11**) was positively related to current math achievement. Being in a vocational high school (-.16***) and attending to preparatory (-.20***) courses

TABLE 6: Results of OLS Regression (DV = Math) – N = 572

Independent Variables	Coefficients			t
	Standardized	Unstandardized	SE	
<i>Background Characteristics</i>				
Gender (Males)	-.06	-.14	.09	1.66
Urban	-.01	-.03	.13	0.28
Graduating GPA	.11**	.77**	.25	3.11**
School Type (Vocational)	-.16***	-.37***	.09	4.18***
School Size (Small)	.05	.05	.04	0.16
Preparatory Courses	-.20***	-.20***	.09	5.24***
Mothers' Education	.05	.09	.08	1.13
Fathers's Education	.07	.10	.07	1.52
Ability	.16***	.12***	.03	4.48***
Aspiration	.07*	.14*	.07	2.04*
Ideal Profession	-.02	-.001	.001	.06
Hours Studied (Week)	-.01	-.001	.03	.34
Guidance	.12**	.21**	.04	3.14**
Parent-School Relationship	.02	.002	.04	.52
Parent-Child Discussion of School	-.05	-.11	.08	1.35

*** p<.001, **p<.01, *p<.05

$R^2 = .23$

TABLE 7: Results of OLS Regression (DV = Science) – N = 572

Independent Variables	Coefficients			
	Standardized	Unstandardized	SE	t
<i>Background Characteristics</i>				
Gender (Males)	-.07	-.15	.08	1.78
Urban	.02	.08	.13	0.66
Graduating GPA	.13***	.92***	.25	3.67***
School Type (Vocational)	-.13***	-.30***	.09	3.30***
School Size (Small)	.05	.09	.08	1.03
Preparatory Courses	.16***	-.38***	.09	4.05***
Mothers' Education	.04	.007	.03	.89
Fathers's Education	-.05	-.07	.06	-1.03
Ability	.13***	.09***	.03	3.58***
Aspiration	.03	.05	.07	.79
Ideal Profession	.07*	.003*	.002	2.79*
Hours Studied (Week)	.003	.002	.03	.08
Guidance	.08*	.15*	.07	2.15
Parent-School Relationship	.05	.04	.04	1.22
Parent-Child Discussion of School	-.04	-.08	.08	-1.68

*** p<.001, **p<.01, *p<.05

R² = .14

for high school were negatively associated with math achievement. Gender, living in an urban environment, and school size were not significantly associated with math achievement.

Mother's and father's education level as an SES measure were not significantly related to math achievement. Student ability was a strong predictor (.16***) of math achievement. Student level of aspiration, although relatively small, was positively associated (.07*) with math achievement.

Receiving guidance in elementary school was positively related to math achievement. Parental involvement variables were not significantly related to math achievement. The model explains % 23 of the variance in the model (R²= .23) in predicting math achievement.

Table 7 reports the results of OLS regression with science as the dependent variable. Graduating GPA was a significant predictor (.13***) of high school science achievement. Attending in a vocational high school was negatively related to science achievement (-.13***). However, taking preparatory courses was the largest predictor (.16***) of science achievement.

Mothers and fathers education were not significantly related to science achievement. Student ability was a positive predictor of science achievement. Having an ideal profession was also a small but positive relationship with science achievement.

Although small, receiving guidance in elementary school positively associated (.08*) with science achievement. Parental involvement variables were not significantly related to science achievement. The model with the dependent variable science achievement explained only % 14 percent of the variance. This model explained the lowest level of variance.

Table 8 presents the results of OLS regression results with verbal as the dependent variable. Consistent with literature being male was negatively associated (-.19***) with verbal achievement. Elementary graduating GPA (-.20***), attending in a vocational school (-.14***), and taking preparatory courses (-.08*) were negatively associated with verbal achievement. Living in an urban environment and school size were not related to verbal achievement.

While mothers education level was not significantly related, although small fathers education level was positively associated (.02*) with verbal achievement. This is the only significant effect of parental education level in any one of the analyses in this paper. Student ability and aspiring to have an ideal profession were positively related to verbal achievement.

Receiving guidance in elementary school and parent school relationship were both positively associated with verbal achievement. The model with the dependent variable verbal explains 20% of the variance ($R^2 = .20$).

Discussion

This study did not find support for educational attainment research which indicates that the later an education transition, the lower SES effects. Specifically, the study found little or no support for the SES effects in academic achievement when transitioning to high schools. This finding is inconsistent with the literature. However, it is also inconsistent with an earlier study that focused on transition into college in Turkey. In his study, Kose found some support for the SES variables in transition to college. As a result of these studies, the results suggests that the

TABLE 8: Results of OLS Regression (DV = Verbal) – N = 572

Independent Variables	Coefficients			t
	Standardized	Unstandardized	SE	
<i>Background Characteristics</i>				
Gender (Males)	-.19***	-.38***	.08	5.18***
Urban	.02	.003	.11	.32
Graduating GPA	-.20***	1.20***	.21	5.65***
School Type (Vocational)	-.14***	-.28***	.08	5.59***
School Size (Small)	.03	.04	.07	.55
Preparatory Courses	-.08*	-.17*	.08	2.17*
Mothers' Education	-.03	.05	.07	.78
Fathers's Education	.02*	.02*	.05	-2.17*
Ability	.08*	.04*	.02	2.20*
Aspiration	.006	.009	.06	.16
Ideal Profession	.05*	.001*	.001	1.31
Hours Studied (Week)	-.03	-.02	.03	.78
Guidance	.11**	.16**	.06	2.75**
Parent-School Relationship	.08*	.07*	.03	2.31*
Parent-Child Discussion of School	-.06	-.11	.06	-1.74

*** p<.001, **p<.01, *p<.05

R² = .20

evidence from Turkey does not support Lucas' (2001) contention that SES effects are higher in transition to high schools.

The following independent variables significantly and consistently associated with overall achievement, math achievement, science achievement, and verbal achievement: Graduating GPA from elementary school (grades 6-8) was positively, school type (attending to a vocational high school), and attending preparatory courses negatively associated. In this study, school size was not related to academic achievement.

Student ability and aspirations or having an ideal profession were consistently positive predictors of overall student achievement, math achievement, science achievement, and verbal achievement. Surprisingly, SES level as measured by

parental educational level (mothers and fathers educational level) was not a significant predictor of academic achievement.

Finally, having guidance in the elementary school was positively associated with overall math, science, and verbal achievement across models. Parent school relationship was significantly associated with overall academic achievement and verbal achievement.

In contrast to studies in developing world, this study results suggest that girls overall perform better than boys regarding overall achievement. Moreover, girls do not lag behind in verbal achievement. The study failed to find any indication that girls were outperformed by boys at the high school level.

The prevailing perception among educational researchers is that smaller schools establish better student and parental involvement that is more likely to yield higher achievement. The argument is that good practices of schooling and student involvement will raise student aspirations and this, in turn, will lead to higher levels of academic achievement. This may be the case, but the limitations of this research must be kept in mind while interpreting the results. In this sample, this was not the case at least for the influence of smaller schools. The results cannot be generalizable to Turkey and this study was not a longitudinal one.

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