

Relationship Between School Characteristics and Approaches To Learning

Okul Özellikleri ve Öğrenmeye Yaklaşım Arasındaki İlişki

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Abstract

The present study questions the correspondence between school characteristics and approaches to learning. A total of 1178 students (age range 18-20) participated in the study. An instrument that contained items on demographic characteristics, school characteristics, and a self-report questionnaire yielding scores on basic motives, strategies and corresponding approaches to learning was administered. Partial correlations were calculated to determine the correspondence between school characteristics and motivational constituents of learning (surface, deep and achieving approaches to learning). Results indicated relatively more frequent use of the deep approach and the achieving strategy in schools where students were observed to perceive fewer problems concerning teacher quality, class size or management.

Key words: Approaches to learning, surface approach, deep approach, achieving approach

Abstract

Bu çalışmada, algılanan okul özellikleri ile öğrenmeye yaklaşım arasındaki ilişki sorgulanmaktadır. Çalışmaya 1178 öğrenci (18-20 yaş aralığı) katılmıştır. Öğrencilere uygulanan ölçek demografik ve okul özelliklerine ilişkin maddeler ile temel motif, strateji ve öğrenmeye yaklaşımlarına ilişkin görüşlerini içeren bir anketten oluşmaktadır. Okul özellikleri ve öğrenmenin güdüsel bileşikleri (yüzeysel, derin ve başarıya yönelik öğrenme) arasındaki ilişki kısmi korelasyon yöntemi ile saptanmıştır. Sonuçlar, öğrenci algısına göre daha az problem (öğretmen niteliği, sınıf mevcudu veya sınıf idaresi) yaşanan okullarda derin yaklaşım ve başarıya yönelik stratejilerin daha sıklıkla kullanıldığını göstermektedir.

Anahitar sözcükler: Öğrenmeye yaklaşım, yüzeysel yaklaşım, derin yaklaşım, başarıya yönelik yaklaşım

Introduction

One major concern of educators is that learning should be centered around meaning rather than the superficial aspects of the to-be-learned material. Students are expected to reflect on what they learn, invest in construction of knowledge, integrating the newcoming information with the existing knowledge base. Whether or not the students live up to these expectations depends on the depth of information processing. Deep processing signifies high levels of attention as it incorporates the acts of linking, explaining

and evaluating information unlike shallow processing which involves imagining terms without the establishment of a large network of links. Theoretical and empirical evidence suggests that cognitive processing, whether deep or shallow, is associated with goals and motivational components (Meece, Blumenfeld and Holye, 1988; Nolen and Haladyna, 1990; Pintrich and DeGroot, 1990; White, 1988). Biggs (1987) utilises motivational constituents of learning and discusses shallow and deep processing modes through motives and strategies dominating the learning process. Three main approaches to learning, specified as surface, deep and achieving approaches, provide a comprehensive framework for characterizing students in a given learning situation. In any learning situation it is possible to come across students who are externally motivated,

learning to meet minimal requirements (surface learners), or students who learn to understand with an intrinsic interest in what is being learned (deep learners), as well as those who learn to get the highest grades to enhance their ego and self esteem (achieving learners). These three approaches to learning are very similar to the mastery, performance and task avoidance goals used in other research studies (Wentzel, 1989; 1991). Several studies show that students who adopt mastery goals are more likely to engage in deep processing, whereas students who adopt performance goals tend to use surface strategies (Nolan Haladyna, 1990; Pintrich and DeGroot, 1990).

Approaches to learning are observed to result from the interaction between the general orientations that an individual displays across particular learning situations, the current task and situational demands. Research has given considerable attention to various individual and situational variables that can influence student achievement goals which in turn determine students' selection of learning strategies (Ames, 1984, 1992; Blumenfeld, 1992; Andrews, Garrison and Magnusson, 1996; Elliot and Dweck, 1988; Somuncuoğlu and Yıldırım, 2000). Environment-oriented theories focus on the demands and constraints of the learning situation and indicate the influence of the school and the classroom climate in determining student goals and motives.

Research focusing on the motivational role of perceptions suggests that students' perception of the social reality of the classroom relate to the selection and use of effective learning strategies (Ames and Archer, 1988). Classroom goal orientations are observed to be a function of how the individual student interprets and reacts to classroom experiences (Ames, 1992; Andrews, Garrison and Magnusson, 1996; Blumenfeld, 1992; Trigwell and Prosser, 1991). However, practices at the classroom level may not be significant if not supported by the outer system, the school environment. Schools are responsible for creating a climate that fortifies deep and achieving approaches, so that the teachers can be more effective in developing the sort of learning that they seek from their students. Individual efforts put forth to stress the value of learning for its own sake may be undermined if the school culture nourishes surface learning. As concluded by Trigwell and Prosser (1991),

initiatives at the individual teacher level may be appropriate, but will not be sufficient, as specific practices, which correlate with deep approaches to learning, like the degree of choice given to students in what and how they learn, will require changes at the school level.

The impact of students' perceptions of the school climate on shaping learning strategies has been evidenced in several studies. Research indicates that when the students perceive the school as a place providing opportunities for their future, they more frequently experience a combination of deep and achieving strategies together. Findings of a study by Ramsden (1988) demonstrate that students who report "deep" strategies in learning perceive the teaching in their schools to be better than those students who report "surface" strategies. Maehr and Fyans (1989) suggest that, as students move towards higher grades, the culture of the school as a whole has a greater impact on student motivation. A recent review by Anderman and Maehr (1994) emphasises the modifiable aspects of school culture in changing the nature and quality of student investment in learning. Studies exploring the relation between school climate and student motives make use of a number of variables to define school climate such as school-wide stress on accomplishment, power, recognition or affiliation (Anderman and Maehr, 1994; Maehr and Fyans, 1990).

The present study focuses on more global characteristics of the school rather than the specific attributes of the learning environment or the school climate, in an attempt to explain approaches to learning in terms of selected characteristics of the school as perceived by the students. The study explicitly addresses those variables of the school that are found to support (school resources and facilities) or impede (school-related problems like inadequate class size, teacher quality and quantity) student control over the learning process (Fuller and Clarke, 1994).

Method

Sample

A total of 1178 students from four different cities and approximately eleven different school types participated in the study. The students were either in their last year of secondary schooling or the first year of higher

education. They were within the 18-20 age group with a mean of 18.5 years (18 years 6 months). Gender distribution across the population was uniform with 52% representing the male and 48% representing the female population. Table 1 shows percent distribution of family characteristics.

Table 1
Percent Distribution of Family Characteristics

Family variable	Value label	Percent	
Parent education level	None	Mother	11%
		Father	3%
	Primary	Mother	39%
		Father	28%
	Secondary	Mother	9%
		Father	11%
	Highschool	Mother	22%
		Father	18%
	University	Mother	19%
		Father	40%
	Family income	Low	9%
		Below average	9%
Average		18%	
Above average		37%	
High		27%	

Table 1 shows the percentage of students who differ in terms of the stated level of parent education. Father education level as stated by the students was observed to be higher than mother education level, with majority of fathers (40%) having completed higher education, whereas majority of mothers (39%) were reported to be primary school graduates.

Table 1 presents income categories derived from data based on income ranges specified in monetary terms. Income ranges were rank ordered and recoded to reflect relative categories, in order to achieve stability and consistency across time. The majority of students (37%) report an income range that corresponds to "above average" category.

Students included in the sample showed considerable diversity in terms of school type. For the purposes of simplicity schools of similar character were included under the same category. For example all vocational schools of similar nature (such as Anadolu Teknik Lisesi, Anadolu Öğretmen Lisesi, Anadolu Meslek Lisesi) were categorized as Anatolian Vocational high school (Anadolu Meslek Lisesi).

Table 2
Sample Distribution of School Types.

School Type	Percent
Genel Lise	47
Anadolu Meslek Lisesi	13
Ticaret Lisesi	2
Özel Lise (Türk)	9
Özel Lise (Yabancı)	2
Anadolu-Fen Lisesi	21
Super Lise	1
Imam Hatip Lisesi	5

A majority of students (47%) in the sample came from regular state schools (Genel Lise), and a substantial number of students (21%) were from Anatolian or Science high schools (Anadolu-Fen Lisesi). Students from vocational and private high schools were represented to a lesser extent (13% and 9% for vocational and private schools respectively). Low percentage levels (5%) observed for the other school types are considered to reflect relative distribution across the larger population.

Measuring Instruments

A single questionnaire comprising three parts was administered. The first part of the questionnaire contained items on demographic characteristics such as parental education, family income, or type of school. The second part contained items on school characteristics. The third part included "Learning Process Questionnaire" items that were used to assess motives, strategies and approaches to learning.

'School Characteristics' was assessed using 20 items related to the characteristics of the school as perceived by the students in terms of "school facilities" and "school-related problems". The "School facilities" component included 14 items to assess the existing

facilities possessed by the school as well as the degree to which these facilities were activated to enrich the learning environment. Each item contained a likely facility (such as the library, laboratory, playground, computer facilities and the like) and questioned its presence and degree of use on a five-point Likert scale ranging from full use to the absence of the facility. The "School-related problems" component included 6 items to refer to the kind of problems that may interfere with the learning environment. Each item referred to a possible general problem and questioned the frequency with which these problems were experienced, using a five-point Likert scale ranging from non-existent to overwhelming existence of the specified problem. Specific problems included adequacy of teachers in terms of quantity or quality, low student motivation, crowded classes, poor or excessively authoritarian management at school level.

The items were scored so as to give the highest point for nonexistent problems. Therefore a high score for this component indicated the existence of few school-related problems. The items included in the "school-related problems" component of the questionnaire were analyzed both in terms of their composite scores (total score) and separately for each individual item.

'Approaches to Learning': The Learning Process Questionnaire (LPQ) is a 36 item, self report questionnaire yielding scores on three basic motives, strategies and corresponding approaches (surface, deep and achieving) to learning. Each item of the questionnaire consists of an affirmative self-report statement that describes a student's strategy or motive. Surface items reflect the extent to which students' beliefs about learning focus on meeting minimal task demands eg "I will work in this subject just to pass the exams and then forget it." Deep items represent an orientation towards mastery and understanding such as "I will learn about this because I find it interesting and want to find out more". Achieving items reflect the degree to which students value ego-enhancement through good performance, like "I will work to get top marks in this subject whether I like it or not". Students are expected to respond to each statement on a five-point Likert scale expressing the frequency of experiencing the behaviors, thoughts or feelings stated in the item. Six subscale scores are obtained for surface, deep and

achieving motives and strategies. The motive and strategy scores are added up to obtain scores for the surface, deep and achieving approaches to learning.

The reliability of the original form of the questionnaire was evidenced by the use of two indices; 1) test-retest information that showed relative stability over a period of four months in two independent studies, 2) satisfactory internal consistency data with the alpha coefficient ranging between .51- .85 for different subscales (Biggs, 1987). Supportive evidence concerning the construct validity of the instrument is indicated in studies where performance was observed to correlate negatively with the surface approach and positively with deep and achieving approaches (Biggs, 1987).

The results addressing the psychometric characteristics of the Turkish form also provide evidence supporting the reliability and the validity of the instrument. The transliteral equivalence of the translated form was confirmed by the use of back translation, where the back translation of four bilingual experts indicated a satisfactory match between the original items and the back-translated items. The internal consistency measure (Cronbach alpha) obtained, using the research sample ($n = 1028$) was observed to be highest for the achieving approach ($\alpha = .8235$), lowest for the surface approach ($\alpha = .5061$) and ranked in between for the deep approach ($\alpha = .6917$). The low alpha coefficient observed for the surface approach is consistent with the findings obtained in the reliability studies of the original instrument where the surface motive was observed to show the least consistency. The low consistency of the surface motive was justified by its dual nature, comprising both the positive and negative aspects of extrinsic motivation, like doing enough to succeed versus fear of failing.

Evidence concerning the validity of the instrument was based on data gathered from 116 secondary school students. Significant (at .01 level) correlations observed between surface approach and science ($r = -.4274$) or mathematics ($r = -.4118$) achievement, as well as achieving approach and math achievement ($r = .2900$) provide supporting evidence with regard to the concurrent validity of the instrument.

Analysis of Data

The Pearson product moment correlation technique was used to analyze the data. Correlation coefficients

were calculated controlling for family variables, such as father education level, mother education level and perceived income of the family, because these variables were assumed to be the major environmental variables intervening with the schooling process. Partial correlation coefficients were calculated with the purpose of overruling the effects of interference between school and family. The correlation coefficients between the two components of the school (school facilities and school-related problems) and approaches to learning were calculated separately for surface, deep and achieving approaches as well as for each underlying motive and strategy. Analysis was based on data obtained from 1061 students (out of 1178), after excluding cases with missing data.

Findings

The study questioned the degree to which school characteristics explained variance in approaches to learning. Table 3 displays descriptive statistics concerning approaches to learning (surface, deep and achieving approaches with corresponding motives and strategies) and school characteristics (school facilities and school-related problems).

Table 3
Descriptive Statistics on Approaches to Learning

Variables	n	Range	Mean	S.D.
Learning Process				
Surface				
Motive	1009	24	18.47	4.60
Strategy	1036	24	19.09	5.37
Approach	998	47	37.60	8.53
Deep				
Motive	1017	24	18.83	3.98
Strategy	1034	24	17.54	3.82
Approach	1006	34	36.35	5.99
Achieving				
Motive	1039	23	21.17	3.62
Strategy	1029	24	19.46	3.99
Approach	1021	47	40.65	6.72
School characteristics				
Facilities	931	53	41.12	9.08
Problems	1020	23	17.93	4.34

Partial correlation coefficients calculated between approaches to learning (with underlying motives/strategies) and composite scores obtained for "school facilities" and "school-related problems" are presented in Table 4.

Correlation coefficients displayed in Table 4 are generally quite low. When one considers the relationship between school variables and approaches to learning, the deep approach is observed to show a significant positive correlation with school facilities ($r = .1116$, at .001 level) and a significant negative correlation with school-related problems ($r = -.1564$, at .000 level). The achieving approach shows a significant negative correlation with school-related problems ($r = -.1253$, at .001 level). When the constituents of the three approaches (motives and strategies) are considered, the deep motive is observed to show significant positive correlation with school facilities ($r = .1222$, at .001 level), and significant negative correlation with school-related problems ($r = -.1845$, at .000 level), while the achieving strategy is negatively related to school-related problems ($r = -.1634$, at .000 level).

Table 4
Correlation Coefficients between School-related Factors and the Learning Process

Learning process	School facilities	School-related problems
Surface approach	.0216	.0356
Surface motive	.0251	.0288
Surface strategy	.0078	.0222
Deep approach	.1116*	-.1564**
Deep motive	.1222*	-.1845**
Deep strategy	.0875	-.0954
Achieving approach	.0830	-.1253*
Achieving motive	.0348	-.0565
Achieving strategy	.1128*	-.1634**

* p-value = .001

n(total group)= 1061

** p-value = .000

According to the findings presented in Table 4, school facilities explained 1.21% of variance in deep approach and 1.44% of variance as the deep motive. School-related problems were observed to account for greater percent of variance in the deep approach (2.56%), deep motive (3.24%) and the deep strategy (1.44%) com-

pared to school facilities. The results obtained for the achieving approach were similar to the results obtained for the deep approach, though the correlations were relatively lower. School facilities showed very low and generally insignificant correlations with approaches to learning except for the achieving strategy, accounting for approximately 1% of variance in the achieving strategy. School-related problems explained slightly higher percentages of variance in the achieving approach (1.82%); and the achieving strategy (2.99%).

Discussion

The present research is one of several studies that investigate school characteristics in relation to student outcome measures. However, unlike much of related research that focus on academic performance as the outcome measure and point out to the correspondence between specific school variables and student achievement (Fuller and Clarke, 1994; Greenwald, Hedges and Laine, 1996), the present study focuses on school characteristics in relation to the motivational components of the learning process. Increasing student motivation is generally considered and dealt with at the classroom level being regarded as an individual activity, principally under the responsibility of the classroom teacher. However, student motives, strategies and approaches to learning are determined by several components, at classroom, school and community level, the potential advancement of each component being effected and limited by the conditions prevailing the outer component. The changes at classroom level may not be effective enough unless more favorable approaches to learning are reinforced by the school or the community. The present study focuses on the school variables that are likely to encourage or limit individual attempts to shape the learning process. The school variables used in this study were not derived from the deliberate efforts of the school to develop favorable approaches to learning. Rather, they defined conditions of the school per se.

Results

The findings of the present study do not provide a substantive base for making strong claims, because the observed correlations were generally quite low despite their significance. However, they indicate the existence of a correspondence between school variables and motivational constituents of the learning process.

The findings suggest that in schools where students state that they experience fewer problems related to teacher quality, class size, classroom management or school discipline, there is relatively more frequent use of the deep approach (both motive and strategy) and the achieving strategy, compared to schools that suffer a greater number of problems. Nevertheless, it should be noted that, although the achieving approach showed a significant relationship with school characteristics, the contribution of the achieving motive was negligible. School characteristics (i.e. school facilities or school-related problems) seemed to be insignificant in explaining the variance in the achieving motive, unlike the achieving strategy. This suggests that students may be experiencing more frequent use of the achieving strategy, trying to be a model student, but they are not acting with an internalized achieving motive seeking to enhance ego or self esteem through competition.

The surface approach was not found to be related to school variables, although one would expect to find reduced display of the surface approach with increasing facilities and lower levels of school-related problems. One possible explanation for the negligible relationship observed between school characteristics and approaches to learning may be the unintended reinforcement of the surface approach within educational circles. Although relatively more stable characteristics of the school seem to encourage the use of the deep approach, many factors of the schooling process particularly the evaluation procedures may reinforce surface learning. Furthermore educational policies at large may limit and restrict the schools' role in shaping motivational constituents of the learning process. Efforts put forth to stress the value of learning for its own sake may be undermined if the system as a whole encourages surface learning and changes at the school level may not be effective enough, unless more favorable approaches to learning are reinforced at the national level. School characteristics may be quite irrelevant when the student's future educational opportunities are determined through standard nationwide exams that questions not how one knows, but how much one knows. As such, surface learning seems to respond to achievement expectations, being predominantly determined by the outer world and less receptive of the school climate.

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Geliş	23 Temmuz 2001
İnceleme	28 Ekim 2002
Kabul	25 Aralık 2002