Approaches to learning and academic performance of Turkish university students

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This paper reports findings with regard to approaches to learning of Turkish students. The term "approaches to learning" refers to the idea that learners perceive and process information in very different ways. The study is set out to (i) explore and describe the approaches of learning of university students; (ii) explore the relationship between approaches to learning constructs, (iii) explore how the learning approaches of Turkish higher education students in combination with gender and academic discipline, year affect and academic performance; Employing a correlational research design- 44-item 1995 version of the RASI and the cumulative grade point, the study was conducted in two departments in two institutions of higher education: one humanities and one engineering. Total 160 students participated. This paper discusses firstly the findings of this study in the light of other research carried out in this area and secondly, and more importantly, in the light of its contribution towards a better understanding of the learning needs of Turkish university students.

Keywords: Approaches to learning, RASI Inventory, gender, year difference, different disciplines, academic performance.

Introduction

Studies of the influence of learning approaches focusing on the quality of learning have been an important feature of educational research since Marton and Saljo (1976) introduced the term "approach to learning" and identified two levels of processing: deep and surface. Marton and Saljo (1976) introduced the idea that when university students undertook an academic task they could adopt either a learning approach either focusing on understanding or focusing on reproducing. These two tiers were called surface and deep learning.

Educational researchers have argued that to systematically improve the quality of learning it is necessary to understand student approaches to learning. The approach students use in their study has a significant impact on both the quality of the learning and their academic success. It would clearly be of value to identify students whose approach to learning was predictive of unsatisfactory performance. Research on student learning at university can be very useful for improving university teaching and learning (Zeegers, 2001). Motivating students to improve their approach to learning is likely to enhance the quality of learning. Approaches to learning are a source of understanding teaching and learning. They are particularly useful for teachers who want to understand their students' learning and create learning environments which encourage students to achieve desired learning outcomes. How students approach to a learning task will strongly influence the quality of their learning outcomes.

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This study aims to investigate how learning approaches of Turkish higher education students in combination with gender and academic discipline, affect their foreign language learning. There is a need to examine the value of learning approaches of Turkish higher education students to their academic performance such as this one based on the assumption that there is a link between effective learning approaches and better academic performance. Specifically, the study will address the following questions:

1. To explore and describe the approaches of learning of university students; the hypothesis is that students will vary in their approaches of learning (Hypothesis 1).
2. To explore and describe the relationship exist between approaches of learning constructs. the hypothesis is that constructs are related (Hypothesis 2).
3. To explore how the learning approaches of Turkish higher education students in combination with gender and academic discipline, year affect and academic performance; the hypothesis is that there is a link between effective learning approaches in combination with gender and academic discipline, year affect and better academic performance students (Hypothesis 3).

1. Literature review

Studies of the influence of learning approaches on the quality of learning have been an important feature of educational research since Marton and Saljo introduced the term "approach to learning" and identified two levels of processing: deep and surface. Marton and Saljo (1976) introduced the idea that when university students undertook an academic task they could adopt either a learning approach focused on understanding or a learning approach focused on reproducing, the two tiers so called surface and deep learning. According to Entwistle (1998) the intention of learning differs dramatically in these two approaches. In the deep approach, the learner intends to understand, interacts with content, relates new ideas to previous knowledge, relates concepts to everyday experience, relates evidence to conclusions and examines the logic of the argument. In the surface approach, the learner intends to complete task requirements, memorizes information needed for assessments, fails to distinguish principles from examples, treats task as an external imposition, focuses on discrete elements without integration and is reflective about purpose or strategies. Entwistle (1979) added a strategic approach to Marton and Saljo's model. Entwistle (1998) defines the strategic approach as intention to obtain highest possible grades, organize time and distribute effort to greatest effect, ensure conditions and materials for studying appropriate, use previous exam papers to predict questions and be alert to cues about marking schemes. Educational researchers have argued that to systematically improve the quality of learning it is necessary to understand their approaches to learning. Duff (2004: 58) summarized the utility of educators measuring students' approaches to learning as:

- encouraging a more systematic approach to academic teaching (Katz and Henry, 1988);
- assisting individual academics who are concerned to monitor and improve the effectiveness of their own teaching (Richardson, 1990);
- identifying students at risk through ineffective study strategies (Tait and Entwistle, 1996);
- observing the outcomes (Biggs and Collis, 1982) and experience of learning (Marton et al., 1984);
- evaluating the quality of student learning (Meyer and Muller, 1990).

There is now a large amount of research concerning how students approach learning in higher education (for literature reviews, see Ramsden 2003; Entwistle, 1998; Prosser & Trigwell, 1999).

Students' approach to learning and the academic performance

The relationship between approaches to study and learning outcomes has been substantiated in a number of research studies, both qualitative and quantitative. The relationship between SAL and the academic performance, in the form of assessment grades, grade point average and self-reported show inconsistent results (Zeegers, 2001).The phenomenographic research group at the University of Gothenburg, using qualitative research methods, have described individual students' approaches to study in terms of surface and deep approaches (Marton and Saljo 1984). A surface approach is one in which students attempt to rote learn material in order to subsequently reproduce it, while a deep approach is one in which they seek meaning in order to understand. Watkins (1982) reports a study of the relationship between approaches to studying and academic grades awarded. This study found that disorganized study methods, surface approach and negative attitudes to studying were consistently related to academic performance. The Gothenburg group and others have shown that these approaches are related to qualitative differences in outcomes; with the deep approach being related to high quality learning outcomes, while a surface approach is related to lower quality outcomes (Marton and Saljo 1984; Prosser and Millar 1989). Harper and Kember (1986) drew the distinction between performance, as an academic outcome, and persistence. Arguing that academic grades from fail to high achievement were not a reliable uniform measure of performance, they considered the difference between high achievers and those who barely passed their course. In the case of external students, having positive attitudes to study, organized study methods and a strategic approach are the best predictors of high achievement. For internals however, students who do not globetrot and display high levels of academic motivation are the most likely to succeed.

2. Methods

A correlational research design was implemented. In order to probe a variety of approaches to learning and academic performance of Turkish university students, it was planned to work with undergraduates from different disciplines, in different years of study and gender. Participants were undergraduate students from Hittite University, a newly founded University in central Turkey.

2.1. Sample

The sample consisted of 160 undergraduate students, 109 males and 51 females, from a small-sized university in central Turkey. Of these, 130 were enrolled in the Faculty of Humanities and 30 in the Faculty of Engineering. Out of 160, 21 (13.1 %) were graduated from Anatolian High school. Anatolian high schools are selective institutions that were established with the aim of preparing students for higher education programs which correspond to their interests, abilities, and level of achievement; providing more effective foreign language teaching; ensuring more efficient education through use of a foreign language as the medium of instruction. 108 (67.5 %) were from General High Schools, and 31 (19.4 %) were Vocational and Technical High School graduates. The average age of the sample was between 17-25 years (SD 7.2); There were 24 first-year students, 30 second-years, 48 third-years and 58 in their fourth year of study. Twenty two had a 3.50-4.00 (13.8 %), sixty-five had a 3.00-3.50 (40.6 %), forty-eight had a 3.00-2.50 (30.0 %), twenty-one had a 2.00-2.50 (13.1 %) and four had a - 2.00 (2.5 %) GPA.

2.2. Measures

Academic performance data. Academic performance data was acquired through student records. Student performance measured using cumulative grade point average student earned from university courses.

The background questionnaire was used to collect information including age, academic discipline,

year, gender and prior academic achievement. Background variables were coded as follows: gender (male, female) , age (the mean age was 23 years), Faculties (Humanities and Engineering), year (1, 2, 3, 4 recorded as a continuous variable); and GPA (recorded as a continuous variable).

The Revised Approaches to Studying Inventory (RASI). This study used the 44-item 1995 version of the RASI (Entwistle and Tait, 1995). The RASI has six dimensions: Deep Approach, Surface Approach, Strategic Approach, Lack of Direction, Academic Self-Confidence, and Metacognitive Awareness of Studying. Respondents were asked to indicate their agreement on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 1. Scales, number of items, alpha coefficients for scores and description of scales.

Scales	No. items	(a coefficient)	Description
1 Deep Processing	10	.70	correlates with an intention to understand;
2. Surface Approach	10	.70	is related to aspects marked by an intention to complete the task (or learning) requirements;
3. Strategic approach	8	.85	achievement motivation and organized studying play central roles.
4. Lack of direction	4	.79	Learners are cynical and disenchanted about higher Education. Feel driven to enter university to please others.
5.Academic self-confidence	4	.60	describes the extent to which a student believes he or she can perform well in school.
6.Metacognitive awareness	6	.85	describes being able to think and talk about one's own thinking processes.

Table 1 shows reliability coefficients (Cronbach's alpha) of the scale. . Except for Academic Self-confidence, the reliability of the study variables was satisfactory, as all coefficients exceeded 0.70. Academic Self- confidence produced scores of more modest internal consistency reliability.

The instrument was used in Turkish. The back-translation method (Brislin, 1986) was applied to ensure cross-cultural conceptual equivalence. Two English–Turkish bilingual experts in the field of Educational Sciences were involved and back translation was compared until the consistent meanings were obtained.

2.3. Procedures

The questionnaire was administered in the fifth study week by staff of each faculty. They did this in class time under test conditions. A brief set of instructions was read out. Next, the students received the RASI and the background questionnaire, as one complete set. Students completed the questionnaires at their own pace.

2.4. Analysis

Mean scores of each item, calculation of Cronbach's α reliability coefficients of the RASI scales, comparison of mean scores of the scales and bivariate correlation analysis were completed using the SPSS (Version 10) statistical package.

2.5. Ethical Issues

Guidelines available from The American Psychological Association's (APA's) Ethical Principles of Psychologists and Ethics Code were followed during the research. Firstly, subjects' privacy was strictly confidential. Individual scores would never be reported, or made public. Permission gained from the learners for the researcher to use the data generated for research

purposes, under the guarantee of anonymity. Participants were informed that they would receive feedback on their performance as a whole class. Students were approached to take part in the research on a volunteer basis. Institutional permission was also provided.

3. Results

3.1. The first research question was to explore and describe the approaches of learning of university students; The hypothesis was that students would vary in their approaches of learning (Hypothesis 1).

Table 2. Descriptive statistics for the RASI scales

Scales	M N=	S.D 160	Max. Score
1 Deep Processing	3.9	0.4	4.9
2 Surface Approach	3.2	0.6	4.4
3 Strategic Approach	3.6	0.7	4.9
4 Lack of Direction	3.9	0.5	5.0
5 Academic Self-confidence	3.4	0.6	4.5
6 Metacognitive Awareness	2.4	1.2	5.0

Note. M= Mean; SD=Standard Deviation; Max Score=Maximum Score.

As Table 2 displays, the mean score for the deep approach to learning was substantially quite lower than the max score, which is 5 (M=3.9; SD=0.4). Deep approach does not seem to be highly demanded. The size of the differences suggests that students are a bit more likely to agree that they learn either for understanding or in an orderly or logical approach to solve a problem which is the most appropriate and desirable way of learning that is closely linked to the intellectual processes we would wish to see in all students and is the means of life-long learning. Actually, the relevant literature suggests that a deep approach is very much essential to learn as the subject demands more of understanding and application than mere recall. University students' approaches to learning have been demonstrated to affect learning outcomes across a wide range of courses, favoring the use of a deep approach. Therefore, it seems necessary to helping these students become better learners.

Table 2 displays that the mean scores of the Lack of Direction was significantly quite high (M=3.9; SD=0.5) which suggested that more learners were unsure about their intentions for entering university. These students may be placed 'at risk' because they experience a significant disenchantment about higher Education. They feel driven to enter university to please others. There is also a possibility that they entered university not because of a desire to pursue knowledge, but because of other factors, such as pressure from parents and a desire for a better job.

As Table 2 shows the mean scores students for students adopting a strategic approach is at almost uncertain level (M=3.6; SD=0.7). An examination of Strategic Approach items-suggested (Table) learners were not very motivated and better organized. This finding suggest that learners seemed not to be be able to manage time, determine to excel, expend effort in studying and be organised in studying. Ideally, they should be more motivated, better organised and able to manage time better.

As Table 2 indicates the mean scores of the items for Academic Self-confidence is low. The result indicates that the students did not indicate confidence academically; They did not have a good grasp of the subjects they were studying and had less difficulty making sense of new information.

The mean scores Metaconitive Awareness were below 2.5 for both groups of learners, suggesting that a majority of these learners 'disagreed' with the items in this category. Metacognition means "thinking about thinking". In order to think and talk about their own thinking, learners have to be aware that they are thinking. Awareness of their own thinking processes is very important if

learners are to become able to manage, organise and develop their abilities to think and learn. We should help these students to reflect on how they are thinking and discover what they could do to make their thinking and learning more effective.

3.2. The second research question was to explore and describe the relationship existing between approaches of learning constructs. The hypothesis was that constructs are related (Hypothesis 2).

Table 3. Inter-correlation matrix between RASI dimension scores (N=160)

		Deep	Surf	Strat	MAS	ASC	LOD
Surf	R	0.2					
	P	0.0**					
Strat	R	0.6	0.3				
	P	0.0**	0.0**				
MAS	R	0.7	0.2	0.6			
	P	0.0**	0.0*	0.0**			
ASC	R	0.3	-0.2	0.4	0.3		
	P	0.0**	0.0**	0.0**	0.0**		
LOD	r	-0.2	0.2	-0.3	-0.1	-0.1	
	P	0.0**	0.0*	0.0**	0.4	0.2	

Note. Deep=Deep Approach; Surf=Surface Approach; Strat =Strategic Direction; ASC=Academic Self Confidence; MAS=Metacognitive Awareness; LOD= Lack of Direction. * p< 0.05 ** p< 0.001

As Table 3 displays Deep Approach is positively correlated with a Surface Approach (p<0.0) Strategic Approach (p<0.0). Metacognitive Awareness (p<0.0) Academic Self-confidence (p<0.0) and negatively correlated with a Lack of Direction (p<0.0).

Similarly, a Surface Approach is positively correlated with Strategic Direction (p<0.0) Metacognitive Awareness (p<0.0) Lack of Direction (p<0.0) and negatively correlated with Academic Self-confidence (p<0.0).

Strategic Direction is positively correlated with   and Academic Self Confidence (p<0.0) and negatively correlated with Lack of Direction (p<0.0).

Metacognitive Awareness (p<0.0) Academic Self-confidence (p<0.0) and negatively correlated with Lack of Direction (p<0.0).

This pattern of correlations is in line with prior studies (Tait et al., 1998), and indicates that the approaches to studying are not entirely independent. The present study supported the research hypothesis which stated that approaches to learning constructs are related.

3.3. The third research question was to explore how the learning approaches of Turkish higher education students in combination with gender and academic discipline, year affect and academic performance; The hypothesis is that there is a link between effective learning approaches in combination with gender and academic discipline, year affect and better academic performance students (Hypothesis 3).

Table 4. Inter-correlation matrix between RASI dimension scores and background variables (N=160)

Scale	Statistics	Gender	Year	GPA	Lycee	Discipline
Deep	R	-0.1	0.0	-0.2	0.2	-0,1
	P	0.4	0.8	0.0**	0.0*	0,2

Surf	R	-0.2	-0.1	0.1	0.0	0,0
	P	0.0**	0.2	0.3	0.9	0,9
Strat	R	-0.1	0.0	-0.5	0.1	0,0
	P	0.3	0.5	0.0**	0.1	0,9
MAS	R	0.1	-0.1	-0.2	0.2	0,1
	P	0.2	0.2	0.0**	0.0*	0,1
ASC	R	0.0	-0.1	-0.3	0.2	0,1
	P	0.6	0.2	0.0**	0.0*	0,1
LOD	R	0.1	-0.3	0.4	0.2	0,3
	P	0.2	0.0**	0.0**	0.0*	0,0**

$* p < 0.05; ** p < 0.001$

Firstly, the study revealed that there is gender difference on Surface Approach. Descriptive statistics reveal that more female students adopt Surface Approach

Secondly, there is negative relation between year and Lack of Direction, as year increases Lack of direction decrease.

Thirdly, the study aimed to measure the effectiveness of students' approaches to learning (i.e., Deep Approach and Strategic Approach) and correlate these scores with their academic performance. This study reveals that students who adapt more desirable approaches to learning perform at an academically higher level. This finding is in line with studies reported. High scores on Deep Approach are positively associated with academic performance, when the assessment procedure directly favors the demonstration of conceptual understanding (Entwistle et al., 2000; Byme et al 2002b; and Tan Choo 1990.).

Fourthly, this study takes up the question of whether the approaches to study adopted by Humanities and Engineering students differ. Although Prosser and Trigwell (1999 p.94) observed that engineering students adopt deep approaches of studying., this study did not observe any difference between Humanities students and Engineering students in the deep approaches they used. However this study revealed difference on Lack of Direction only, humanities students reported more Lack of Direction.

Fifthly, the present study was also conducted to determine if there was a relationship between academic success and what type of high school (either public or a selective institution) a student attended. Descriptive statistics reveal that Anatolian High School graduates adopt Deep Approach (p< 0.05), and they indicate confidence academically (p< 0.05). General Lycee graduates displayed more Lack of direction (p< 0.05).

Conclusion

This study is the first systematic and detailed study research which has been carried out on the studying behaviour of Hittite University students as a predictor of academic performance. The originality lied in that the study covers undergraduates from different disciplines, and in different years of study and gender. This study raised awareness about why and how Hittite University undergraduates learn and how they attained academic performance. This study was developed to fill this gap of undergraduate education.

It was a well-known fact that students' approaches to learning are a source of understanding teaching and learning. It would clearly be of value to identify students whose approach to learning was predictive of unsatisfactory performance. There was a need to examine the value of learning approaches of Hittite University students to their academic performance such as this one based on the assumption that there is a link between effective learning approaches and better academic performance.

This study examined the approaches students use in their study. The related literature revealed that the approaches students use in their study has a significant impact on both the quality of the learning and their academic success. Research on student learning at university could be very useful for improving university teaching and learning.

This study tested three hypotheses concerning the link between approaches to learning constructs and approaches to studying that students from different discipline, gender, year and academic performance adopt as they learn. The findings from Descriptive Statistics and Bivariate Correlation Analysis provided some support for the hypotheses, and shed light on the approaches adopted by Turkish university students.

Hypothesis 1 stated that students would vary in their approaches of learning. Therefore, Hypothesis 1 was fully supported.

Hypothesis 2 stated that constructs are related. These findings support the distinctiveness of approaches to studying constructs.

Hypothesis 3 stated that there was a link between effective learning approaches and gender and academic discipline, year affect and better academic performance students. Avoidance coping predicted a surface approach, whereas self-punishment coping did not. Therefore, Hypothesis 2 was supported for avoidance coping and disconfirmed for self-punishment coping.

In conclusion, as a result of the proposed research, Hittite University administrators and tutors may develop a more systematic approach to academic teaching, assist students who are concerned to monitor and improve the effectiveness of their own teaching, identify students at risk through ineffective study strategies, observing the outcomes and experience of learning, and evaluating the quality of student learning. Therefore, this research on student learning at Hittite university can be very useful for improving university teaching and learning. It seems logical that students' preferred approaches to learning would have systematic consequences, one of which is better academic performance. Identify students 'at risk' through poor learning strategies. Students' approaches to learning are not perceived as stable, like a personality trait, but dynamic and likely to be modifiable under the influence of the educational environment (Fox et al., 2001; Zeegers, 2001).

Limitations

The present study reflects a number of limitations. First, the extent to which the results can be generalized for students in similar Turkish contexts is unclear. A generalization should depend on additional research in other academic contexts, curricula, and considering a broader range of characteristics of the learning environment. Secondly, next to the cultural and learning context, other independent variables might contribute to the differences and similarities identified in the present study. Follow-up research is needed including such additional variables in the study design.

Future research

Despite its limitations, this preliminary study establishes links between students' approaches to studying and their academic performance. It is necessary to replicate the findings of this study using a longitudinal design throughout a semester, and examining the implications to learning and performance. This research direction has both theoretical and practical value. It is useful to ground the construct of approaches to studying in the more general cognitive and behavioral strategies people adopt when facing negative or challenging situations. Future research should test treatments designed to focus upon students' approaches to learning and assess the impact of these treatments upon the achievement of at- risk students.

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