

Effect of Study Habits on Test Anxiety and Academic Achievement of Undergraduate Students

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The current study was conducted to investigate the effect of study habits on test anxiety and academic achievement of undergraduate students. A purposive sample comprised of 180 undergraduate students (84 boys and 96 girls) was drawn from a public university. Multivariate analysis of variance indicated that study habits have a significant effect on test anxiety and academic achievement. The findings revealed that students having effective study habits experience low level of test anxiety and perform better academically than students having ineffective study habits. It was also indicated that girls experience higher level of test anxiety as compared to boys. The findings also highlighted that girls exhibit better study habits and excel more academically than boys. Correlation analysis indicated significant positive relationship between study habits and academic achievement and test anxiety was negatively correlated with academic achievement and study habits. These findings highlighted the need to improve study habits of undergraduate students in order to overcome test anxiety and improve their academic achievement.

Key words: *study habits, test anxiety, academic achievements, undergraduate students*

Introduction

During all phases of education, students are evaluated on their abilities and accomplishments. Tests and examination results indicate their level of accomplishments in the relevant subjects. Academic achievement has an extremely imperative role in academic career. Students' professional career also depends on their achievement level in academics (Zeidner, 1988). Academic achievement can be defined as successful accomplishment or execution in a specific field of subject (Hawes & Hawes, 1982). Academic achievement is thought to be influenced by many factors; two of them are study habits and test anxiety among students.

Students cannot perform efficiently without proper learning. For learning, every student uses different techniques and methods on a scheduled and regular basis, these habitual practices for studying

can be termed as study habits or study skills used by students (Khurshid, Tanveer & Qasmi, 2012). Study habits and skills vary from one person to another. According to Azikiwe (1998), study habits are the approaches and ways a learner employs during his personal study time in order to achieve the mastery of the subject. Study habits and skills are the learning techniques that learners use to learn individually. Effective study habits assist students to gain mastery of a topic to learn and ensure the good performance in academics.

The terms of study habits and study skills are used as interchangeable constructs. Congos (2010) presented six dimensions of study skills i.e. textbook reading, memory, time management, note-taking, test preparation and concentration. Proper time management is an important component of study

habits that can enhance one's performance. Effective time management skills include studying on daily basis, forming timetables, study plans and utilizing time properly. Spending extra hours for studying with lack of concentration does not define the appropriate utilization of time. Concentration is also a significant dimension of study habits. It is the ability to give attention and avoid distractions while studying. Note-taking is not just writing the lecture in fact it also needs attention and listening ability to properly note down the lecture. Strategies used to memorize the learned material are also attributes of study habits. Effective textbook reading is not only reading the material but also comprehending the reading material by constructing themes and main ideas (Ayesha & Khurshid, 2013; Congos, 2010; Osa-Edoh, & Alutu, 2012).

In literature, study habits and test anxiety are considered to be related to each other. Test anxiety can be defined as "The set of phenomenological, physiological and behavioral responses that accompany concern about possible negative consequences or failure in the examination or similar evaluative situation" (Zeidner, 1998, p. 17). Test anxiety is experienced when the demands of evaluative settings provoke the fear of failure, risk to self-worth and apprehension about being assessed by others (Putwain, 2008). Test anxiety has been categorized into two components named as worry and emotionality. Emotionality is the affective dimension of test anxiety which is associated with physiological reactions to the evaluative situations. In contrast, worry is the cognitive component of test anxiety; it involves the cognitive reactions associated with test anxiety and refers to the concerns about being evaluated in a testing situation (Liebert & Morris, 1967; Zeidner, 1998).

Skills-deficit model proposed that ineffective study habits of students cause them to experience high level of test anxiety and results in poor test performance. Test anxious students lack the ability to learn and encode material adequately; as a consequence, they are unable to retrieve poorly learned material while attempting the test (Culler & Holahan, 1980; Desiderato & Koskinen, 1969; Wittmaier, 1972). According to Desiderato and Koskinen (1969) test anxiety is caused by inappropriate study-related behaviors of students. It

has been reported that high test anxious individuals are deficient in effective study skills and habits as compared to less test anxious individuals. Ergene (2011) found that the study habits and test anxiety are negatively related to each other.

Literature has emphasized the significance of students' study habits for their academic performance. It has been argued that effective study habits are extremely essential in order to avoid the academic failure. Students have to face problems in academics because of their poor study habits consequently adversely influencing their academic performance (Menzel, 1982). Gettinger and Seibert (2002) mentioned that learners who exhibit ineffective study habits can have a tendency to have low scholastic performance. Acquiring effective study habits could improve the learner's educational abilities and more likely to lessen the chances of failure. Crede and Kuncel's (2008) meta-analysis came up with the finding that non-cognitive variables such as study skills, habits and motivation are responsible for the enormous variation in academic achievement and execution. Surapur (2012) also reported that good study habits influence the educational achievement favorably.

Regarding the relationship between study habits and academic achievement Ergene (2011) reported that the study habits and Grade Point Average of students are positively correlated. Poor study habits predict low GPA of students. Similarly, Ayesha and Khurshid's (2013) and Congos (2010) research revealed that all subscales of study skills inventory are positively correlated with the achievement level. More recently Sandhu (2014) studied the study habits of adolescents and their relation with achievement level and found the significant positive correlation between these two variables.

The construct of test anxiety has been extensively explored in relation with the learners' test performance and their achievement level. Sarason (1984) stated that test anxiety is a major debilitating variable for all academic performance from elementary to higher education. Seipp (1991) conducted a meta-analysis which indicated that test anxiety and academic performance are negatively correlated with each other. It was also reported in their study that the individuals who experience low

level of test anxiety would possibly score higher than those who experience high levels of test anxiety. Rana and Mahmood (2010) reported that both the worry and emotional component of test anxiety are negatively correlated with academic scores. Another research by DordiNejad et al. (2011) revealed the negative relationship between test anxiety and grade point average (GPA) of students. Similarly, recent researches by Khaledian, Amjadian and Pardegi (2013) and Roy (2013) also support that the test anxiety and academic achievement are inversely correlated with each other. Students who experience high level of test anxiety achieve less marks in academics. On the other hand, Oladipo and Ogungbamila's (2013) study came up with contradictory findings and concluded that test anxiety has no significant relationship with students' achievement level.

Several research studies have been conducted to investigate the gender differences in terms of test anxiety and concluded that females experience elevated level of test anxiety as compared to their male counterparts (e.g., Chapell et al., 2005; Cassady & Johnson, 2002; Ergene, 2011; Soffer, 2008; Roy, 2013). Spielberger (1980a) reported that female learners have high score on emotionality scale as compared to worry scale. Cassady and Johnson (2002) concluded that both male and female students experience similar level of worry, but females experience high intensity of emotionality. The higher intensity of test anxiety is possibly ascribed to their conventional female attributes such as they are delicate, kind, compassionate, adoring and considerate, while males are vigorous, determined, aggressive, leaders and shield their thoughts and feelings (Martin, 1987). Silvestri (1986) explained this gender discrepancy is because society has defined different roles of males and females and because of desired societal demands females experience high level of test anxiety as compared to males.

Regarding the gender differences in terms of academic achievement, most of the studies revealed that females are better than males in academic achievement and they perform superior to their male counterparts academically (e.g., Voyer & Voyer, 2014, Ayesha & Khurshid, 2013; Fazal, Hussain, Majoka, & Masood, 2012; Decore, 1984).

Ogoemeka (2013) suggested that as compared to females, male students barely pay attention to their low academic grades and their focus is merely on passing the tests. Such attitudes of boys can be the reason of their low academic scores.

Various research studies have been done to unfold the gender differences in terms of study habits. It has been accepted that girls used better learning techniques as compared to boys (Fazal et al., 2012). Ergene's (2011) study examined the gender differences in terms of study habits and concluded that girls have better study habits than boys. Ossai (2012) and Ogoemeka (2013) came up with the similar findings that overall girls have better study habits than boys. On the contrary, study of Nouhi, Shakoori and Nakhei (2008) established that to some extent male students have better study skills and habits than females. Udeani's (2012) research also showed that boys scored better in most of the dimensions of study habits as compared to girls.

The above-mentioned literature suggested that ineffective study habits can adversely reduce the academic achievement of students so as to lead them to experience high level of test anxiety. The available literature has recommended that improving students' study habits will not only enhance their academic performance but also impede them to experience high level of test anxiety. Learners cannot acquire effective study habits by themselves; they actually require assistance from teachers, psychologists or counselors in order to improve their study habits (Udeani, 2012). It has been considered imperative to introduce organized study skills training programmes for the students. It has also been suggested in literature that effective study habits can be developed with the passage of time and experience (Sandhu, 2014).

Rationale of the Study

Every student endures test and examinations throughout the educational career. Literature has acknowledged that university years are more challenging than any other level of education. At university level, students have to face many problems and stressors (Rodgers & Tennison, 2009). It has been indicated that test anxiety is one of the major issues that can adversely affect students' academic success (Zeidner, 1998). In

addition, students cannot perform well without proper learning and effective study habits. It has been suggested that students with effective study habits experience less test anxiety and high academic achievement as compared to the students with ineffective study habits (Ergene, 2011, Sandhu, 2014). A lot of work in the west has been done on this subject but the literature on this subject is still scarce in Pakistan. The academic atmosphere of foreign institutions is different than the educational system in Pakistan. These educational issues should be explored indigenously at university level.

Keeping in view the previous literature the following hypotheses were formulated.

Hypotheses

1. Students having effective study habits would have better academic achievement than the students having ineffective study habits.
2. Students having ineffective study habits would exhibit higher level of test anxiety as compared to those having effective study habits.
3. There would be significant gender differences in terms of study habits, test anxiety and academic achievement.
4. There would be significant relationship among study habits, test anxiety and academic achievement.

Method

Participants

Purposive sampling technique was used to draw the sample. The sample was comprised of 180 university students (84 boys and 96 girls) of B.S. (Hons.) with students having effective study habits - males =33(39.3%), females =49(51%) and within effective study habits males =51(60.7%) and females 47(49%). They were selected from both social sciences and pure sciences departments of a public university. The age range of the participants was from 19 to 21 years ($M = 19.77$, $SD = .82$).

Research Instruments

Test Anxiety Inventory

Test Anxiety Inventory was used to measure test anxiety. It was developed by Spielberger (1980b). The inventory consists of 20 statements.

These statements are related to how often individual experiences symptoms of anxiety before, during and after the test. Responses were obtained on four point scale i.e., Almost Never = 1, Sometimes = 2, Often = 3 and Almost Always = 4. The inventory gives a score of total test anxiety also with the scores on two subscales i.e., Worry and Emotionality. The first item of the inventory is scored reversely. The score on emotionality component (TAI-E) of test anxiety is measured by item no. 2, 8, 9, 10, 11, 15, 16, and 18. The score on worry component (TAI-W) of test anxiety is measured by item no. 3, 4, 5, 6, 7, 14, 17 and 20. The total score of test anxiety (TAI-T) is obtained by adding all the items of the inventory. The test retest reliability for Test Anxiety Total (TAI-T) for two weeks to one month period is .80 to .81 for male and female college students respectively. Construct validity of this inventory was found by administering the Sarason's Test Anxiety Inventory (1978) along with the Test Anxiety Inventory. The correlation between the total score on both inventories was high i.e., .82 to .83, suggesting the evidence of strong construct validity (Spielberger, 1980b). In this study, the reliability of TAI was found to be .85 and for worry and emotionality it was .73 and .79 respectively. .

Study Skills Inventory

The study skills inventory developed by Congos (2010) was used to measure the study habits and skills of college students. The inventory consists of 52 items. It measures the scores on six subscales regarding study habits and skills. These subscales are Textbook Reading, Note-Taking, Memory, Test Preparation, Concentration and Time Management. Responses were rated on a five-point scale i.e., Almost Never = 1, Less than half of the time = 2. About half of the time = 3, More than half of the time = 4 and Almost Always = 5. The subscale of Textbook Reading (TR) includes eight items of the inventory. Note-Taking (NT) includes six items of the inventory. Nine items are used to measure the subscale Memory (MEM). Test Preparation (TP) is covered by thirteen items. Ten items measure the subscale of Concentration (CONT), whereas, the domain of Time Management (TM) includes six items of the inventory. Total sum of all the subscale gives a total score of study skills/habits. The split half reliability of the two parts of this inventory is

.789 and .749 respectively. In this study, the coefficient of reliability was computed for study skills inventory and Cronbach's alpha was found to be excellent $\alpha = .92$ (as $\alpha > .90$). the alpha reliability for the subscales textbook reading .72, note taking .72, memory.77, test preparation.77, concentration .75 and time management .80 .

Procedure

First of all, permission was taken from the university's authorities to conduct the research. The consent was taken from the participants and they were informed about the purpose of the study. They were asked to read the questionnaire carefully and select the option which truly reflects their attitude. Both instruments i.e., Test Anxiety Inventory (TAI) and Study Skills Inventory (SSI) were administered in order to measure test anxiety and study habits respectively. The level of student's academic

achievement was measured by their Cumulative Grade Point Average (CGPA) obtained in the last year. Students were required to mention their CGPA as well as their CGPA was also counter checked with the University's examination record. Each student took 10-15 minutes to complete the questionnaire. The participants of the study cooperated well. After the collection of data the sample was divided into two groups i.e., students having effective study habits and students having ineffective study habits on the basis of the cutoff score of study skills inventory which was 156. Participants scored below 156 were considered as students having ineffective study habits and participants who scored 156 and above were considered as students having effective study habits. These two groups were then compared in terms of their level of test anxiety and academic achievement.

Results

Table 1

Multivariate Analysis of Study Habits and Gender for Test Anxiety and Academic Achievement (N=180)

Source	Dependent Variables	df	MS	F	Partial η^2	Observed Power
Study Habits	CGPA	1	1.83	40.18***	.186	1.00
	TA	1	377.66	4.27*	.024	.54
	TAI-E	1	88.90	4.52*	.025	.56
	TR	1	1538.39	65.46***	.271	1.00
	NT	1	1324.75	75.24***	.299	1.00
	MEM	1	2816.51	107.65***	.380	1.00
	TP	1	6330.98	224.88***	.561	1.00
	CONT	1	2810.47	122.07***	.410	1.00
	TM	1	1227.12	76.65***	.303	1.00
Gender	CGPA	1	.26	5.61*	.031	.65
	TA	1	1109.82	12.55**	.067	.94
	TAI-E	1	411.86	20.96***	.106	.99
	CONT	1	221.05	9.60**	.052	.87
Error	CGPA	176	.05			

TA	176	88.42
TAI-W	176	20.59
TAI-E	176	19.65
TR	176	23.50
NT	176	17.61
MEM	176	26.16
TP	176	28.15
CONT	176	23.02
TM	176	16.01

* $p < .05$. ** $p < .01$. *** $p < .001$. Note. Only significant results are indicated.

CGPA= Cumulative Grade Point Average (Academic Achievement); TA= Test Anxiety; TAI-E= Emotionality Component of Test Anxiety; TR= Textbook Reading; NT= Note-Taking; MEM= Memory; TP= Test Preparation; CONT= Concentration; TM= Time Management.

Multivariate Analysis of variance was conducted to compute the main and interaction effect of study habits and gender on academic achievement, test anxiety and subscales of study habits. Table 2 shows that there was a significant main effect of study habits on all dependent variables except worry, whereas, it had a significant main effect on academic achievement $F(1, 176) = 40.18, p < .001$, test anxiety $F(1, 176) = 4.27, p < .05$, emotionality $F(1, 176) = 4.52, p < .05$, and its subscales. It is indicated that students having effective study habits ($M = 3.22, SD = .21$) academically perform better than those having ineffective study habits ($M = 3.01, SD = .22$). The results revealed that students having ineffective study habits ($M = 46.40, SD = 11.38$) experience high level of test anxiety as compared to students having effective study habits ($M = 44.05, SD = 7.14$). Students having effective study habits have better scores on all the six dimensions of study habits as

compared to their counterparts with ineffective study habits. Results shows that there is a significant main effect of gender on test anxiety $F(1, 176) = 12.55, p < .01$, emotionality $F(1, 176) = 20.96, p < .001$ and on academic achievement $F(1, 176) = 5.61, p < .05$. Results indicated that females ($M = 47.52, SD = 9.07$) showed high test anxiety as compared to males ($M = 42.82, SD = 9.90$). Similarly, females ($M = 19.83, SD = 4.19$) are experiencing more emotionality than males ($M = 16.99, SD = 4.77$). It has been also seen that females ($M = 3.16, SD = .21$) perform better on academic achievement than males ($M = 3.05, SD = .26$) There was also a significant main effect of gender on concentration $F(1, 176) = 9.60, p < .01$. As findings indicated that females ($M = 33.10, SD = 6.32$) have better scores on concentration than males ($M = 29.89, SD = 6.09$). The result of MANOVA revealed no significant interaction effect of gender and study habits on any of the dependent variables.

Table 2

Means, Standard Deviations and t-value of Study Habits of Male and Female Students (N=180)

Variable	Male Students		Female Students		t(178)	95% CI		Cohen's d
	(n= 84)		(n=96)			LL	UL	
	M	SD	M	SD				
Study Habits	150.90	28.84	159.51	27.04	2.07*	.38	16.83	.31

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

* $p < .05$. Results in Table 2 indicate that there is a significant difference between the study habits of male and female students $t(178) = 2.07, p < .05$. Females ($M = 159.51, SD = 27.04$) have better study habits as compared to their male counterparts ($M = 150.90$). Cohen's effect size value ($d = .31$) indicates a medium size effect for gender with respect to study habits.

Table 3

Correlation Matrix of Main Variables of the Study ($N=180$)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. CGPA	-	-.32***	-.39***	-.19*	.54** *	.38** *	.40** *	.49** *	.44** *	.50** *	.24** *
2. TA		-	.85***	.87** *	-.18*	-	-.16*	-.21**	-.12	-.07	.02
3. TAI-W			-	.55** *	-.17*	-.25**	-.13	-.22**	-.09	-.13	.04
4. TAI-E				-	-.14	-.22**	-.14	-.16*	-.11	.01	-.02
5. SH					-	.80** *	.75** *	.80** *	.85** *	.78** *	.62** *
6. TR						-	.53** *	.63** *	.58** *	.54** *	.40** *
7. NT							-	.60** *	.61** *	.41** *	.36** *
8. MEM								-	.54** *	.57** *	.32** *
9. TP									-	.60** *	.50** *
10. CONT										-	.41** *
11. TM											-

Note. CGPA= Cumulative Grade Point Average (Academic Achievement); TA= Test Anxiety; TAI-W= Worry Component of Test Anxiety; TAI-E= Emotionality Component of Test Anxiety; SH= Study Habits; TR= Textbook Reading; NT= Note-Taking; MEM= Memory; TP= Test Preparation; CONT= Concentration; TM= Time Management.

Table 3 shows that academic achievement, study habits, test anxiety and their subscales are significantly correlated with each other. There is a significant negative correlation between academic achievement and test anxiety ($r = -.32, p < .001$) and

its subscales worry ($r = -.39, p < .001$) and emotionality ($r = -.19, p < .05$). Academic achievement of students significantly positively correlated with study habits ($r = .54, p < .001$) and also with its all six subscales. Test anxiety is

significantly negatively correlated with study habits ($r = -.18, p < 0.05$).

Table 4

Gender and Study Habits as predictors of test anxiety (N=180)

Predictors	R^2	ΔR^2	β
Step 1	.058	.053	
Gender			.24**
Step 2	.081	.071	
Gender			.26***
Study Habits			-.15*

* $p < .05$. ** $p < .01$. *** $p < .001$.

The result of stepwise regression analysis for the prediction of test anxiety shows that there are two possible models among the predictors. Results reveal that step 1 is comprised of one factor i.e. gender. The results indicates gender is the positive predictor of test anxiety ($\beta = .24, p < .01$). At this step, model shows 5.8% of variance in test anxiety of students $F(1, 178) = 11.05, p < .001$ is accounted for

by gender. At step 2, after addition of study habits, the model explains 8.1% of variance in test anxiety $F(2, 177) = 7.80, p < .001$ is accounted for by both gender and study habits. Step 2 shows gender is the best predictor of test anxiety ($\beta = .26, p < .001$) followed by study habits ($\beta = -.15, p < .05$), which is the significant negative predictor of test anxiety.

Table 5

Gender and study habits as predictors of academic achievement (N=180)

Predictors	R^2	ΔR^2	B
Step 1	.191	.186	
Study Habits			.44**
Step 2	.219	.210	
Study Habits			.42**
Gender			.17*

* $p < .05$; ** $p < .001$

The result of stepwise regression analysis for the prediction of academic achievement reveal that step 1 includes one factor i.e. study habits, which is the significant predictor of academic achievement ($\beta = .44, p < .001$). At this step, model shows 19.1% of variation in academic achievement of students $F(1, 178) = 41.93, p < .001$ is accounted for by study habits. At step 2, gender is also added, the model explains 21.9% of variance in academic achievement $F(2, 177) = 24.77, p < .001$ is accounted for by both study habits and gender. Results

indicate study habits is the best predictor of academic achievement ($\beta = .42, p < .001$) followed by gender ($\beta = .17, p < .05$).

Discussion

Ineffective study habits are considered as an obstacle to achieve good grades that direct students to experience test anxiety. It has been recognized that students have to deal with different challenges and stressors at university level. Moreover, university students are often indulged in other

activities unrelated to academic tasks (Misra & McKean, 2000; Rodgers & Tennison, 2009). This study was conducted to explore the effect of study habits and gender on test anxiety and academic achievement of undergraduate students. The findings revealed that students with effective study habits have high academic achievement as compared to those with ineffective study habits. These findings are consistent with the previous researches (e.g., Crede & Kuncel, 2008; Ergene, 2011; Gettinger & Seibert, 2002). Ineffective study habits leads to poor preparation and students encode and store the material inadequately as a result they are unable to recall poorly learned material during the examination (Zeidner, 1998).

Results also indicated that students with ineffective study habits considerably experience higher level of test anxiety as compared to those having effective study habits. Similar findings were reported in different researches earlier (e.g., Culler & Holahan, 1980; Udeani, 2012; Zeidner, 1998). The findings also supported the skill-deficit model which has suggested that test anxiety is caused by ineffective study-related behaviors of students and high-test-anxious individuals are deficient in effective study skills as compared to individuals experiencing low level of test anxiety. It seems that when students do not utilize their abilities effectively, it makes them inept to prepare well for the upcoming exam. Students' poor preparation because of their poor study habits makes them test anxious.

Findings of the study revealed that students having effective study habits and those having ineffective study habits also significantly differ in terms of emotionality component of test anxiety. Whereas, the results have indicated that study habits do not significantly affect the cognitive component of test anxiety. Students with effective study habits and students with ineffective study habits do not significantly differ in terms of worry component of test anxiety. These findings are in contrast with the previous literature as Ergene's (2011) study demonstrated that worry is related to study habits, whereas, emotionality has no relationship with study habits. The study indicated that ineffective study habits of students lead them to experience emotional reactions during testing situations. Literature

suggested that emotional reactions of test anxiety are frequently experienced straight away before the evaluative situation. It has also been recommended that students with poor preparation are prone to perceive test as a threatening situation (Spielberger & Vagg, 1995). Ineffective study habits of students may incline them to perceive the testing situation as threatening, as they are not well prepared for taking the test. Consequently, students become anxious before the evaluative situation and manifest emotional reactions such as palpitation, dizziness, sweating, sickness feelings etc. As far as cognitive component of test anxiety is concerned, this study suggests that students are concerned and worried for their exam regardless of their study habits.

The findings also revealed the gender differences in terms of test anxiety. The study indicated that boys and girls significantly differ regarding their experience of test anxiety. Girls considerably experience higher level of test anxiety as compared to boys. Previous researches have indicated the similar findings (e.g., Chapell et al., 2005; Cassady & Johnson, 2002; Ergene, 2011; Roy, 2013). Significant gender differences have been found in terms of emotionality component of test anxiety but girls and boys do not differ in terms of worry component of test anxiety. These findings are also consistent with the prior literature. Most of the studies came up with the similar findings that female students have significantly higher level of emotionality when contrasted with male students, while they do not differ on the worry component of test anxiety (Cassady & Johnson, 2002; Rana & Mahmood, 2010). Possibly, girls experience high level of test anxiety because of their high scores on emotionality component of test anxiety. The high level of test anxiety perhaps ascribed to their conventional female qualities such as they are delicate, kind, compassionate, adoring and considerate, while males are vigorous, determined, aggressive, leaders and suppress their thoughts and feelings (Martin, 1987). Our society also implicitly encourages males to suppress their emotions and feelings while encourages females to express their feelings. Accordingly, these gender differences possibly not genuine differences in the level of test anxiety, however it might reveal the extent to which girls and boys are prepared to admit their anxiety (Ergene, 2011).

Moreover, the findings also revealed that girls excel more academically than boys. The previous literature also supports the current results that females perform better than their male counterparts in academics (Decore, 1984; Voyer & Voyer, 2014). Ogoemeka (2013) suggested that as compared to females, male students barely pay attention to their low academic grades instead their focus is on just passing the exam. It is also thought that boys are usually careless about their studies. Moreover, it has become a common trend in our society that girls are more achievement driven and grades-oriented. They usually prove themselves as high achievers. It has been seen during previous years that girls bag top positions in almost all secondary, college and university examinations every year in Pakistan.

The findings regarding gender differences in terms of study habits showed that girls have better study habits than boys. This finding is supported by previous researches which also have reported that girls showed better study habits than boys (Ergene, 2011; Fazal et al., 2012; Ossai, 2012; Udeani, 2012). Khurshid et al. (2012) have proposed that females have better study habits as they manage their time more efficiently and use appropriate methods for the preparation of their tests and examination. Moreover, in our society, girls are usually restricted to stay at home especially during late hours. Whereas, there are comparatively lenient rules for boys, so they can spend more time socializing and on recreational activities that is why mostly boys fail to utilize their abilities properly and consequently exhibit low academic success.

The findings of the study also found significant gender differences regarding concentration and we can infer from the findings that girls are better at concentrating on their work and they use such techniques that help them to maintain their focus and avoid distractions while studying. This result is also consistent with the previous studies that females scored higher than males on the subscale of concentration (Ayesha & Khurshid, 2013; Khurshid et al., 2012). The results indicated that female students have overall better study habits as compared to male students. They have the tendency to attend classes regularly, participate in the class and spent more time studying (Ergene,

2011). They are more cautious about performing well academically.

The results of correlation analysis indicated that academic achievement has a significant inverse relationship with test anxiety; this result is consistent with the previous literature (Chapell et al., 2005; Hembree, 1988; Hill & Wigfield, 1984). There was a significant negative relationship between academic achievement and worry component of test anxiety. Ergene's, (2011) study supports the current study and stated worry is negatively related to academic achievement. It was found that students worry cognitions and negative thoughts about oneself and examination can adversely affect the academic performance (Cassady & Johnson, 2002). There is also a significant inverse correlation between emotionality component and academic achievement, supported by Hembree's (1988) research findings. Sarason (1984) also suggested that high test anxious individuals have low academic achievement because of their poor attentional focus and irrelevant thoughts and worry during evaluative situations.

Results also revealed that academic achievement is significantly positively correlated with study habits as well as its all subscales. It is suggested that effective study habits can lead to good academic performance. The conclusions are also supported by prior researches (Crede & Kuncel, 2008; Mendezabal, 2013). The findings indicated that students who have ineffective study habits generally have reduced academic performance. Test anxiety was also significantly inversely related to the study habits and it can be inferred that students who scored low on study habits have high level of test anxiety. The skill-deficit model supports the findings of our study. It has been suggested that due to lack of effective study skills and habits, students inadequately encode and store information during the preparation of examination which may lead them to experience test anxiety and ultimately poor academic performance.

The results also proposed that poor textbook reading, ineffective note-taking and poor memorizing techniques can lead to experience test anxiety. Furthermore, it was also suggested that both component of test anxiety are related to each other. Previous literature also indicated that emotionality and worry are related components as worry is

considered to be subsequent to emotionality (Hembree, 1988; Schwarzer, 1984). Emotionality component of test anxiety has significant inverse relationship with textbook reading and memory. It was suggested that students who have command over their text books and those who have good memorizing skills are less likely to experience emotional reactions during testing situations. The worry component of test anxiety was also found to be negatively correlated to study habits. It was shown that students having effective study habits are less prone to experience worry regarding tests. These conclusions are consistent with the Ergene's (2011) findings.

Results showed gender and study habits as the predictors of test anxiety. The current findings suggested that gender has a strong effect on level of test anxiety of students. As the literature supported that male and female students are differ in terms of test anxiety and females are more prone to experience test anxiety (Cassady & Johnson, 2002; Ergene, 2011). The results also showed that after gender, study habits significantly predicted the test anxiety among students. The findings are consistent with Ergene's (2011) study that study habits are a negative predictor of test anxiety, which reflects that students' effective study habits predict low levels of test anxiety among them. It has been revealed that study habits and gender predict the academic achievement of students. These findings are also supported by Ergene (2011), who suggested that gender is a strong predictor of academic achievement. Females showed better achievement level than males. It was indicated that study habits were found to be the strongest predictor of academic achievement. High scores on study habits would predict the high academic achievement. These conclusions are consistent with the previous literature (e.g., Ergene, 2011; Mendezabal, 2013).

Conclusions

The study concluded that study habits of undergraduate students had a significant effect on their level of test anxiety and academic achievement. The findings supported the skill-deficit model of test anxiety and concluded that students having ineffective study habits tend to experience high level

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of test anxiety and consequently low academic achievement. It is also concluded that girls experience higher level of test anxiety, particularly the emotionality component of test anxiety than boys. In comparison with boys, girls perform better academically and have better study habits. Gender and study habits were shown to be the significant predictors of test anxiety and academic achievement of undergraduate students.

Implications

This study has addressed the issue of ineffective study habits and its effects on test anxiety and academic achievement. The findings of the study have suggested the need to develop effective study habits among undergraduate students in order to avoid test anxiety and improve their achievement level. The study has highlighted the importance of effective study habits at university level and the need for strategies and intervention plans for improving study habits of undergraduate students. It is suggested that university administration in collaboration with teachers should implement such intervention plans and workshops for developing effective study habits. The findings could help educationists, psychologists and campus counselors to better comprehend these important educational issues and further to assist students with their academic problems. This study also recommends that educational administration should encourage students to seek assistance regarding their educational problems from the university counseling center.

Limitations and Suggestions

The study was conducted on university students studying in the semester system. It is suggested that similar research can be carried out in different settings (e.g., school or college students studying in annual system). The study has identified adverse effects of ineffective study habits on academic success and anxiety level among students. In future, studies should be conducted to develop intervention programs that may help students to improve their study habits.

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