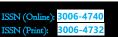# Examining the Relationship of Study Skills with Academic Achievement of University Students: The Moderating Influence of Academic Self Concept

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Abstract

This study examined how academic self-concept influences the relationship between study skills and academic achievement among university students, utilizing a sample of 300 students selected through convenient sampling. The variables in the study were assessed through the Study Skills Questionnaire (McCombs, Barbara, Ecbrovolnv, & Jacqueline, 1980) and the Academic Self-Concept Scale (Liu & Wang, 2005). The findings of the study revealed a

significant positive relationship between the study skills of university students and their academic performance. The result of the logistic Analysis indicated that study skills had a positive correlation with academic achievement. Nevertheless, the influence of academic self-concept on the relationship between study skills and the academic performance of university students was found to be negligible. The t-test indicated a statistically significant difference in academic self-concept between male and female university students. The study also uncovered significant differences in the academic self-concepts between day students and those residing in hostels within the social sciences.

Keywords: Study skills, Academic self-concept, Academic achievement, University students.

Introduction

For several students, university life is a challenging phase of their lives. It is significant for students to manage multiple changes in their study routines. How well the students coordinate their study skills will determine their success in university. To avoid wasting time, a student who is perpetually well-organized performs admirably and employs effective study methods. Study skills must be learned by most pupils because they are not innate. Due to biological and psychological variances, it is common knowledge that learning processes vary from person to person. According to a study, almost three-fifths of a person's learning style is biologically determined. In addition, it was discovered that each learner acquires unique learning-related characteristics. Bossaert, Doumen, Buyse, and Verschueren (2011) also argue that many instructors teach what they have previously read. As a result, a sizeable proportion of students may have felt frustrated, as their learning preferences were not considered by many of their instructors. In the context of pupils with diverse cultural and educational backgrounds and educational experiences, the case is more serious. There have been numerous efforts to improve the academic achievements of students. The achievement of their pupils and children has always been the primary focus of numerous devoted educators and parents (Preacher & Hayes, 2008). Often, a person's study style is identified to assess academic attainment strengths. Literature asserted that both low and average achievers get greater marks on standardized achievement and aptitude tests because of their respective study methods. Study skills are seen as academic enhancers; they serve as essential learning aids. Study skills cover a variety of cognitive skills and procedures that improve the efficacy and efficiency of students' learning (Hayes, 2012).

Research on study skills (Zimmerman, 2002), suggested that study skills courses were under practice and research at the university level for the first time in the 1950s. These remedial courses focused on the skills of reading, note taking, and time management for higher level and for second grade. It was stated that the conceptual foundation for self-regulation learning depends upon the ability to instigate the set of goals by the applications of study skills, at the meanwhile evaluating and observing own performance through evaluation tests (Zimmerman & Schunk, 2001). The way used to test the student's success in their education is called academic achievement. It is also important to estimate the role of factors responsible for academic success like moderating, mediating, and predicting the role of learning skills (Ahmad & Bruinsma, 2006).

Consequently, study skills provide the foundation for learners to be self-regulated in their pursuit of good marks. Gettinger and Seibert (2002) found a correlation between academic accomplishment and the application of good study skills. Following the requirements of academic endeavors, study skills refer to the ability of students to employ their time and resources effectively by employing the appropriate study strategies and approaches (Crede & Kuncel, 2008). According to studies, students who can employ study methods for obtaining, organizing, combining, and remembering activities might have a better evaluation and be high achievers (Schraw, Crippen & Hartley, 2006). In addition, surveys have confirmed the substantial correlation between study skills and academic achievement. Felipe (2008) and Aluja and Blanch (2007) showed that students fail examinations due to insufficient reading and poor skills. In their different investigations, Fielden (2004), and Ossai (2011) discovered strong predictive connections between study skills and academic performance-related characteristics. According to Bandura, people's conduct may often be better anticipated by the notions they have about their capabilities, often known as self-concepts, than by the actual talents they possess. These self-perceptions help determine what individuals do with the abilities they possess (Pajares & Schunk, 2001).

Another facet that can deliver a significant impact on the relationship between study skills and academic achievement is the student's academic self-concept. Bong and Skaalvik (2003) utter that academic self-concept primarily indicates one's self-perceived ability within a given academic field. Achievement studies have proven that academic self-concept positively correlates with academic accomplishment (Pajares & Schunk, 2001). This relationship between academic self-concept and achievement has also had support from domains other than academic performance. McCormick and McPherson (2003) examined young instrumentalists who were completing graded music exams and found that academic self-concept was the best predictor of performance.

Marsh (2007) revealed in a longitudinal study that the academic self-concept has a direct influence on the academic achievement of graduate students as opposed to top intermediate students. Another area of interest to the current study is gender differences in academic self-concept; Britner and Pajares (2001) reported that 7th-grade girls had higher academic self-concept and achievement in science than 7th-grade boys, and also investigated gender differences in academic self-concept for learning and reported that girls had stronger academic self-concept for self-regulated learning and higher achievement. Considering significant differences in self-perception between males and girls affected their academic performance (SarAbadani, 2006). Students must possess both the will and skill to succeed in classrooms, according to Crede and Kuncel (2008). Most of what teachers do and can do directly and indirectly influences students' judgments of their competence, according to Lefrancois (2000). Because cognitive and instructional aspects of educational engagement and learning are intrinsically linked to academic success, they have been the focus of instruction. The present study concentrates on the relationship between study skills and academic achievement having the academic self-concept as the moderator. It focused on the differences in the academic self-concept between males and females and their association with their achievement. The consequences of several written reports on study skills as a mapping of gender have been very interesting and illuminating though the findings have differed from one subject to another. The Aluja & Blanch (2004) study found that girls scored higher on study habits measure, whereas the Pintrich study (2000) reported masculine

characteristics as being more strongly linked to effective study skills than feminine ones. On the other hand, the studies by Kagu (2003) and Ossai (2004) found no significant difference in the study skills of male and female students.

Numerous gaps in the literature were identified in relation to the concept of the current study, including the paucity of Pakistan-based studies, the moderating role of academic self-concept between study skills and academic performance, and the absence of studies in the natural and social sciences domains. The current work explained the optimal use of different study skills and suggested the difference in scores and application of study skills between females and males. This study sheds light on the study skills utilized by Pakistani students, particularly in relation to academic accomplishment. This work will assist readers to comprehend the magnitude of the correlation between university students' study skills and academic performance. Study skills are essential to the academic success of university students. Students with learning difficulties have poor study abilities (Ferrett, 2000). As a concluding point, it is noteworthy to reiterate Bandura's (1994) assertion that students may perform poorly either because they lack the skills or because they possess the talents but lack the perceived personal efficiency to utilize them optimally.

Methodology

Objectives
- To study the relationship between study skills and academic achievement of university students.
- To evaluate the moderating role of academic self-concept on the relationship between study skills and academic achievement.

Hypotheses
1. There is a positive relationship between study skills and the academic achievement of university students.
2. Academic self-concept of males will be higher as compared to female university students.
3. Academic self-concept of university hostelites will be higher than day scholars.
4. Academic self-concept will moderate the relationship between study skills and academic achievement.

Sample & Research Design
Several universities in Taxila, Wah Cantt, Islamabad, and Rawalpindi (*N*=300) were contacted for the current study, which employed a cross-sectional design and convenient sampling. Natural sciences (*n*=141) and social sciences (*n*=159) college students participated in the research. The participants consisted of boys (*n*=140) and females (*n*=160) from a variety of socioeconomic backgrounds. The participants of the current study included both hostelites and day scholars.

Measures
Demographic sheet; includes gender, respective faculties (Natural Sciences, or Social Sciences), and residence as day scholars or hostelites.

Study Skills Questionnaire (SSQUES); by McCombs, Barbara, Ecbrovolnv & JacquelineL (1980) was used to measure the students' study skills. Time management, memorizing, note-taking, test preparation, reading textbooks, and studying are the six domains of the 30-item questionnaire. Five questions about study skills are in each questionnaire section. It scored with a 4-point Likert system. The alpha reliability ranged from .81 to .95.

Academic Self Concept scale: by Liu and Wang (2005) was used which had two sub scales; (*a*) academic confidence, and (*b*) academic effort, each with 10 items to collect the students' academic self-concept information. The items included both negatively and positively worded items to avoid the same answers from the students. Both academic confidence and academic effort items were mixed in the scale; academic confidence items taking odd numbers (1, 3, 5, 7, 9, 11, 13, 15, 17, 19), while academic effort items taking even numbers (2, 4, 6, 8, 10, 12, 14, 16, 18, 20).

Academic Achievement measures: In this study, students were asked to provide their current Cumulative Grade Point Average (*CGPA*), which served as an indicator of their academic accomplishment.

Procedure

Firstly, the participants (university students) were approached from different areas of Taxila, Wah Cantt, Rawalpindi, and Islamabad. The respective university department chairs were then approached for consent. Faculty members and students were instructed on the goal and nature of the study; the demographic form was filled out and the questionnaire was filled out according to the instructions. Before completing the scales, participants were instructed to "complete the questionnaires thoroughly, without skipping any questions." The data was obtained with the consent of university students enrolled in their respective faculties.

Ethical Consideration

No deception or falsification occurred in the study. The informed consent provided accurate information. Participant's personal information was kept confidential. The participants and the researchers were unrelated. Respect and safety were given to participants.

Result

Table 1 *Frequency and percentage of participants (N=300)*

Demographic variables	F	%
Gender		
Male	140	46.7
Female	160	53.3
Faculty		
Natural sciences	141	47.0
Social sciences	159	53.0
Resident		
Day scholars	197	65.7
Hostelites	103	34.3

Table 1 shows the frequency and percentage of university students with respect to gender, faculty, and residence. Male students (*f*=140, 46.7%) and female students (*f*=160, 53.3%). Social science students (*f*=159, 53.0%) were greater in number as compared to natural science students (*f*=141, 47.0%). Day scholars (*f*=197, 65.7%) were in a higher ratio than hostelites (*f*=103, 34.4%).

Table 2 *Alpha reliability coefficients of study variables* (*N=300*)

Scales	*K*	*α*
Study skills	30	.90
Academic self-concept	20	.86

Table 2 indicates the reliability analysis of study skills scale and Academic self-concept scale is .90 and .86 respectively which signify high internal consistency of the presently used scales.

Table 3 *Psychometric properties of study variables (N=300)*

Variables	*M*	*SD*	Range		Skewness	Kurtosis
			Potential	Actual		
Study skills	185.9	58.53	0-300	40-300	0.29	-0.37
Academic achievement	3.18	0.71	1-4	2-4	-0.29	-0.99
Academic self-concept	60.9	10.31	20-100	30-85	0.80	0.98

Table 3 shows the Psychometric properties of the study variables. The values of skewness and Kurtosis for the study skills scale, academic achievement and academic self-concept scale are less than 1 which indicates that univariate normality is not problematic.

Table 4 *Pearson correlation among study variables (N=300)*

Variables	*1*	*2*
1. Study skills	-	.12*
2. Academic achievement		-

*p<.05.

Table 4 demonstrates the Pearson correlation among study variables. Findings indicate that study skills significantly correlate with academic achievement r (298) = .12*, p* <.05.

Table 5 *Mean, standard deviation, and t-values for male, female, day scholars and hostelite university students on academic self-concept (N=300)*

Academic self-concept						95%CI		Cohen's *d*
	n	*M*	*SD*	*t(298)*	*p*	LL	UL	
Male	140	62.8	12.6	3.03	.00	1.25	5.89	0.35
Female	160	59.2	7.4					
Day scholars	197	58.3	6.93	-6.39	.00	-9.85	-5.21	-0.79
Hostelites	103	65.8	13.5					

***p < .001

Table 5 indicates the mean, standard deviation, and t-values for male, female, day scholars and hostelite university students on academic self-concept. Results indicate significant mean differences on academic self-concept with *t* (298) = 3.03 and -6.39 respectively. The findings show that males (*M* = 62.8, *SD*= 12.6) scored higher on academic self-concept than females *(M* = 59.2, *SD*= 7.4) and hostelites (*M* = 65.8, *SD=13.5*) scored higher than day scholars *(M* = 58.3, *SD*= 6.93) on academic self-concept.

Table 6 *Mean, standard deviation, and t-values for students of natural sciences and social sciences on study skills (N=300)*

Variables	Natural sciences (n=141)		Social sciences (n=159)		t(298)	p	95%CI		Cohen's d
	M	SD	M	SD			LL	UL	
Study Skills	179.5	49.7	191.5	65.0	-1.87	.07	-25.0	1.08	--

Table 6 shows the mean, standard deviation, and t-values for university students of social science and natural sciences on study skills. Results indicate non-significant mean differences in study skills with t (298) $= p >.05$. for students belonging to natural sciences ($M = 179.5$, $SD=49.7$) and social sciences ($M = 191.5$, $SD = 65.0$).

Table 7 *Summary of Logistic Regression Analysis predicting Academic Performance by the Study skills and Academic Self-concept (N = 300)*

Predictors	B	SE	OR	Wald statistic	p	95% CI LL	UL
				Outcome: Academic Achievement			
Study skills	-.33	.72	3.97	7.03	.036	.56	.92
Academic Self-Concept	-.26	.77	4.41	4.41	.008	.60	.98
Study skills × Academic Self-Concept	.04	1.04	.57	.09	.763	?1	1.33
Constant	.62	1.86	1.62	24.38	.000		

R² (Nagelkerke) = 0.54, R² (Cox & Snell) = 0.04
-2 LL =442.96
χ^2 = 371.32 (p= .001), df = 3
Note. CI = confidence interval for the odd ratios (OR).

Table 7 indicated a logistic regression analysis to predict academic achievement using study skills and academic self-concept as predictors. A test of the full model against a constant was significant, indicating that the predictors as a set reliably distinguish between high and low achievers (χ^2 = 371.32, p= .001, df = 3). Nagelkerke's R² of 0.54 indicated a moderately strong relationship between prediction and outcome. The Wald criterion demonstrated that moderating role of academic self-concept is non-significant on the relationship between study skills and academic achievement of university students.

Discussion

The present study examined the relationship between university students' study skills and academic achievement, as well as the moderating effect of academic self-concept; the study variables were compared based on gender, residence as day scholars or hostelites, and faculties of natural sciences and social sciences. Three hundred students from the faculties of scientific and social sciences were selected using a straightforward selection technique.

Based on gender, more females than males participated in this survey, with most respondents hailing from the social sciences. Frequency suggested that a relatively high proportion of individuals were day students. The psychometric features of the study demonstrated the reliability and validity of the scales. According to the hypothesis that there is a positive association between university students' study skills and academic accomplishment, the data suggested a strong positive relationship. Academic achievement is an important component of overall potentiality, and a student's abilities can be measured most accurately by his or her academic achievement.

Learners' study skills contribute to academic achievement and make them good achievers (Nuthanap, 2007; Othman, 2011). In their academic lives, university students face numerous challenging sources of stress, including the achievement and mastery of their course under time constraints. The increased study skills enabled them to perform better on their tests. Researchers need to establish a causal link between study abilities and academic performance (Alexander & Onwuegbuzie, 2007). According to the majority of research, each student has his or her patterns and skills of studying and memorization in the educational sector, and these study skills are the central notion or acquired momentum for evaluating their academic progress (Singh, 2010; Nuthanap, 2007). The abilities and performances of students reflect their study tactics and habits, as well as their goal-directed activities toward their learning and achievement (De la Fuente & Cardelle, 2009).

According to the second hypothesis, the academic self-concept of male university students is expected to be higher than that of female university students, and the results revealed a substantial difference. The findings are consistent with previous research; gender comparison in academic self-concept and academic achievement has been observed in a few studies in recent years, with girls achieving higher grades in education than boys, but boys having a higher self-concept because they have more opportunities to believe in themselves (Duckworth & Seligman, 2006; Silverman, 2003). Recent research has shown that there are notable disparities between self-concept and study practices (Kochanskaet al., 2001; Matthews et al., 2009; McClelland et al., 2007) in the association between self-concept and academic accomplishment (Denham et al., 2012; Ready, LoGerfo, Burkam & Lee, 2005). Using their teachers' records and work presentations, another study found significant differences between male and female academic self-concepts (Matthews et al., 2010). Due to their greater test/exam anxiety, female students are anticipated to have a lower self-perception and academic performance than male students (Onyeizugbo, 2010).

According to the third hypothesis, hostelites are likely to have a higher academic self-concept than day students. Academic self-perception is a mandatory component that has prompted numerous investigations and yielded the same conclusions from earlier research. A favorable academic self-image is useful, particularly for motivating pupils to improve their academic performance. Students residing in hostels are separated from their families and are expected to be more responsible than day scholars, who enjoy a full social life and many distractions on the path of their studies (Marsh, 2007).

The association between study skills and academic accomplishment was expected to be moderated by academic self-concept. The results suggested that the full model test against a constant was significant, however the moderating effect of academic self-concept was not significant in the association between university students' study skills and academic accomplishment. Chapman et al. (2000) found that negative and positive academic self-concepts better explain study skills and that the predictive relevance of academic self-concept varies by student and subjective subgroup. In a study, Acosta (2001) found a high correlation between academic self-perception and academic achievement. Prior longitudinal studies have demonstrated a reciprocal association between academic self-concept and academic achievement (Marsh, Hau & Kong 2002; Valentine, 2002). Nilson, Morder, and Kapakla (2007) found a substantial correlation between students' academic self-perception and their examination performance. Recent research has uncovered a correlation between a high degree of academic

self-concept and the well-being of students, particularly in their adolescent years (Nwankwo & colleagues, 2012).

Because there are so few studies based on division within a university on subject area or residents, as well as the moderating role of academic self-concept between the relationship of study skills and academic achievement among university students, the present study will be a significant contribution to literature.

Implications/ Significance

- The findings of this study will assist readers in comprehending the significance of the relationship between university students' study skills and academic performance.

- Compared to the enormous work done on instructional methods and activities, the investigation of study skills in the classroom is sometimes disregarded. It will help students learn how to use study skills and which abilities are best for earning high grades.

- The practical applications of this research will enable teachers to assist students in adopting effective study habits and fostering the development of their achievement-related self-concept.

- The current research will aid in gaining knowledge of how the application of study skills influences the academic accomplishment of university students and how their self-concept plays a significant role in the link between the variables.

Limitations

The present study has a few limitations.

- The sample size was comparatively small a larger sample can be approached to get more results.

- The current mental and physical health of students might have influenced their responses so future studies can exert more control over personal variables.

- Lastly, other resources may also be used to carry out this study like qualitative analysis or interviews etc.

Note:

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