

The Role of Study Skills in Academic Achievement of Students: A Closer Focus on Gender

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The study aimed at identifying various study skills used by the learners, to ascertain which study skill is more related to academic achievement and to compare the use of study skills between girls and boys. The sample consisted of 300 intermediate students (173 girls, 127 boys) taken from 10 colleges of Abbottabad, Pakistan. Modified version of Scale for Study Habits and Attitudes (Ansari, 1983) was used to identify study skills. Academic achievement was determined by marks scored by students in Annual examinations conducted by Board of Intermediate and Secondary Education, Abbottabad. The findings indicate significant relationship of time-management skills, reading, and note-taking skills with academic achievement; there were nonsignificant relationship for other study skills. Students with higher academic achievement use a wide range of study skills as compared to students with lower academic achievement. Analyses further revealed that the girls were better in using study skills as compared to boys. The results of this study may pave the way for further research leading to improve teachers' thrust on developing learners having sufficient skills.

Keywords: self-regulated learning, high and low achievers, study habits, study skills, academic achievement

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Research on study skills has not a very long history and according to Hartley (1986), in the middle of 1950s study skills courses were under research and practice at university level for the first time. These remedial courses focused on skills of reading, writing, and note-taking skills for higher level and then for secondary level. In 80s, mostly the teachers and researchers believed that these skills could be taught even at preschool level. The conceptual foundation for self-regulated learning depends upon the ability to initially set objectives for learning and then achieving these goals by application of strategies and skills; at the same time evaluating and observing own performance through restructuring environment where necessary (Zimmerman, 1995; Zimmerman & Schunk, 2001). Thus study skills form the base for self-regulated learning and learners with better study skills may be more self-regulated in learning.

In compliance with the requirements of academic tasks, the ability of a student to know suitable strategies and methods for study, while utilizing his time and resources efficiently is referred to as study skills (Crede & Kuncel, 2008). Gettinger and Seibert (2002) stated that academic competence is associated with the knowledge and application of effective study skills. Capable students in all classes may experience difficulty in school; not because they lack ability, but because they lack good study skills (Nicaise & Gettinger, 1995). Onwuegbuzie, Slate, and Schwartz (2001) highlighted self-regulated learning as an indicator of academic achievement: Self-regulated learners are better at using effective strategies and evaluating themselves (Schraw, Crippen, & Hartley, 2006; Pintrich, 2000; Zimmerman, 2002) and were proficient in using study skills for acquiring, organizing, amalgamating, remembering, and using information (Harvey, 1995).

Researchers and practitioners both agree on the need for students to regulate their learning processes because (a) the learning outcomes are positively influenced by self-regulated learning (Azevedo, Cromley, & Seibert, 2004; Masui & DeCorte, 2005; Pintrich, 2000; Thiede, Anderson, & Therriault, 2003) and (b) lifelong learners crucially require self-regulation to maintain and extend learned skills for working in future contexts (Kriewaldt, 2001; Vermunt, 2000). Self-regulated learning has greater impact on the use of study skills by the students with high academic performance (Zimmerman & Martinez-Pons, 1986, 1990). It is not only dependent on use of one or other skill but also a variety of skills to make learning more effective. According to Gersten (1998) many students who do not know the “tricks of the trade” face difficulties in learning.

Numerous studies have focused on various aspects of study skills to exhibit relationship between study skills and academic GPA in college students (Al-Hilawani & Sartawi, 1997; Blustein et al., 1986; Hattie, 1999; Jones, Slate, Perez, & Marini, 1993; Kern, Fagley, & Miller, 1998; Miller, 1991). According to Zimmerman, Greenberg, and Weinstein (1994), the major problem with students is poor time-management. Some students can best perform in the morning, while others feel fresh in mid day or in the evening. They can best utilize their time at these day times and act positively than the other time of the day (Fry, 2003). According to Landsberger (2009), time-management is a skill requiring continuous practice and assistance. Kern et al. (1998) stressed on time-management and concentration necessary for good grades. Demirel and Turan (2010) found positive relationship between self-regulated learning skills and achievement.

Some students develop study skills independently without having acquired effective approaches for studying (Nicaise & Gettinger, 1995). Brazeau (2006) stressed that the active part of learning is to directly involve the students in the process of identifying, collecting, and organizing the information through the process of note-taking as it helps to pinpoint critical points, correlate concepts, and organize the content in an understandable manner by utilizing organization strategies (Weinstein & Mayer, as cited in Nuckles, Hubner, & Renkl, 2009). Note-taking allows better retention being a self-made study aid as compared to non note-taking (Beecher, 1988). Ausubel differentiated between meaningful-learning and rote-learning by pointing out that the former is due to the linking of present knowledge with prior knowledge, which is essential for successful learning (as cited in Sleight & Mevis, 2006).

Gender has also been highlighted by different researchers with reference to the study skills literature. Wolters (1999) and Niemivirta (1997) found out that learning strategies used by girls were greater than boys. Zimmerman and Martinez-Pons (1990) found that girls were better than boys in self-monitoring, goal setting, planning, and structuring of their study environment whereas Coley (2001) found girls to be significantly better than boys in reading and writing. Similarly the studies (Chavous, Smalls, Rivas-Drake, Griffin, & Cogburn, 2008; Cokley & Moore, 2007; Saunders, Davis, Williams, & Williams, 2004; Sirin & Rogers-Sirin, 2005; Willingham & Cole, 1997) exhibited females' superiority over males in achieving high grades in college. In the Pakistani context, where institutional set-up at secondary level for boys and girls differs from other societies, exploring the gender differences can be valuable.

The vast portion of research material relating to study skills has focused on cultures other than Pakistan, resulting in less understanding of the local environment. This coupled with the demoralizing status of students' achievement is a cause of concern for the parents, teachers and the government. Many efficient works have been done by the educationists to uncover and locate the causes of these problems. Suggestions and ideas have been presented by approximately all the commissions and the education policies together with 1999-2000 to bring improvement in the current situation. Despite these efforts the problem is still unresolved (Government of Pakistan, 1999). The crux of the present study can direct us to the curative solutions for the study skills of the students and this also enlighten the minds of good learners to find the root cause of this worsening and deterioration.

Keeping in mind the research on study skills and Pakistani context, the present research aimed to explore the role of study skills in academic achievement. It is hypothesized that use of a range of study skills would have positive effect on academic achievement. The other objective is to find out gender differences in using study skills.

Method

Sample

Five boys (three from private and two from public sector) and five girls' (three from private and two from public sector) colleges were selected for sample. The group of people forming a community was urban and moderate and provided paramount atmosphere for learning. From sampled institutions 15% students were randomly selected as sample of study. It provided a sample of 300 intermediate (part II) students out of which 173 were girls and 127 were boys. The mean age of the students was 17.75 years.

Measures

Study Skills Scale. Study Skills scale was developed (Fazal, 2005) by modifying Scale for study habits and attitudes by Ansari (1983) to identify various study skills used by the students. The scale comprised of 40 items which were rated on a 5-point rating scale. Out of these 40 items, 32 were positively phrased and 8 were negatively

phrased. Scoring ranged from *strongly disagree* (1) to *strongly agree* (5); reverse scoring was done for the negatively phrased items.

The items were related to various study skills such as time-management, reading, memorizing, concentration, perception, note-taking, summarizing, organizing, writing, rote-learning, and miscellaneous study skills. The reliability of the questionnaire was found out to be .83 through Cronbach's alpha coefficient (Fazal, 2005).

Academic Achievement

Marks secured by students in the Annual Examination (2005), Board of Intermediate and Secondary Education (BISE), Abbottabad, were taken as academic achievement of the students. The marks were the average of all subjects studied at intermediate level (Part 11) and the annual examination covered total contents of all courses specified at this level.

Procedure

The participants were provided the questionnaire with the information sheet and instructions attached; they were requested to fill it up and return the same in three days. The consent of the students was obtained by giving them information sheet discussing issues of objectives of the study, request to read each item carefully and answer honestly, voluntary consent, confidentiality, anonymity, and right to quit. The class teachers were requested to make sure that each question was handled carefully and answered accordingly. Parental consent was not involved.

Data related to academic achievement of the students was collected from the results of Annual Examination (2005), Board of Intermediate and Secondary Education, BISE, Abbottabad.

Results

The students with marks above 60% were considered as high achievers, while the students with marks below 60% were termed as low achievers. For analysis and interpretation of data, mean, standard deviation, correlation and *t*-test were used as statistical tools.

The study found significant correlation between overall use of study skills and academic achievement ($r = .20, p < .05$). Table 1 shows the correlation between study skills and academic achievement.

Table 1

Correlation between Individual Study Skills' Scores and Academic Achievement (N=300)

Study skills	Academic achievement
Time-management	.56*
Reading	.24*
Memorizing	-.01
Concentration	.04
Perception	.11
Note-taking	.61*
Summarizing	.17
Organizing	.02
Writing skill	.18
Rote-learning	.02
Miscellaneous study skills	.13

* $p < 0.05$

There appears a significant correlation for skills of reading, time-management, and note-taking with academic achievement which shows that these skills may significantly contribute to academic achievement.

Table 2 exhibits moderate effect size for time-management skill and summarizing skill of high achievers; whereas large effect size is exhibited in reading and cumulative skills. Relatively small significance is shown in concentration, perception, note-taking, and rote-learning skills, having small effect sizes. The skills like memorizing, organizing, writing have zero effect sizes, indicating nonsignificant difference between high academic achievers and low academic achievers.

Table 2
Mean, Standard Deviation, and t-test Analyses for High-achievers and Low-achievers on the Individual Study Skills (N = 300)

Study Skills	High Achievers (n = 158)		Low Achievers (n = 142)		t(299)	p	Cohen's		95% CI	
	M	SD	M	SD			d	LL	UL	
Time-management	14.32	2.83	12.76	3.19	4.46	.00	.52	.08	1.04	
Reading	18.71	3.87	15.38	4.17	7.13	.00	.83	.23	1.52	
Memorizing	9.87	2.50	9.54	2.79	1.09	.14	.13	-.26	0.59	
Concentration	15.84	4.10	14.18	4.86	3.16	.00	.37	-.27	1.17	
Perception	10.23	2.62	9.49	2.58	2.48	.001	.29	-.12	0.71	
Note-taking	17.27	3.61	15.83	3.76	3.38	.00	.39	-.17	1.01	
Summarizing	6.07	1.93	4.75	1.95	5.90	.00	.68	.38	1.00	
Organizing	11.63	2.55	11.41	2.66	.74	.23	.09	-.31	0.52	
Writing skills	9.05	2.63	8.56	3.04	1.50	.07	.17	-.24	0.67	
Rote learning	5.28	2.19	4.22	2.12	4.26	.00	.49	.15	0.84	
Miscellaneous study skills	16.99	4.80	16.57	4.70	.76	.22	.09	-.66	0.86	
Study Skills	135.85	15.23	122.68	14.11	7.77	.00	.90	-1.48	3.22	

Note. No. of girl high achievers = 99; no. of girl low achievers = 74; no. of boy high achievers = 59; no. of boy low achievers = 68; CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit.

Table 3
Mean, Standard Deviation, and t-test Analyses for Gender Difference in the Individual Study Skills and Academic Achievement (N = 300)

	Girls (n = 173)		Boys (n = 127)		t(299)	p	Cohen's		95% CI	
	M	SD	M	SD			d	LL	UL	
	Study skills	127.22	24.6	118.75			25.56	2.82	.00	.33
Time-management	13.89	2.95	13.15	2.84	2.19	.02	.26	-.18	.75	
Reading	17.75	3.99	16.29	4.17	3.05	.00	.36	-.23	1.08	
Memorizing	8.95	2.58	8.64	2.94	.95	.17	.11	-.27	.63	
Concentration	4.86	2.14	4.68	2.53	.63	.27	.08	-.24	.52	
Perception	9.94	2.59	9.80	2.76	.45	.33	.05	-.33	.53	
Note-taking	10.20	2.68	9.04	2.87	3.56	.00	.42	.02	.92	
Summarizing	5.73	1.92	5.05	2.98	2.25	.01	.28	.00	.80	
Organizing	15.50	4.23	14.44	4.79	2.00	.02	.24	-.39	1.07	
Writing skills	11.60	2.55	11.43	2.74	.56	.29	.07	-.31	.54	
Rote-learning	17.10	3.58	15.90	3.77	2.78	.00	.33	-.20	.98	
Miscellaneous study skills	17.37	4.70	16.00	4.84	2.44	.01	.29	-.41	1.13	

Note. CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit

Table 3 reflects small effect size for gender on cumulative study skills, depicting significant difference between mean study skills scores of girls and boys. Results depict small effect size for summarizing, time-management, reading, note-taking, organizing, rote-learning, and miscellaneous study skills for gender. While concentration, perception, and writing skills have zero effect size; indicating nonsignificant difference between male and female learners. It means that girls use these skills more efficiently as compared to the boys.

Discussion and Conclusion

The current study examined the relation between study skills and academic achievement. It was hypothesized that the use a range of study skills would have positive effect on academic achievement. The results support this hypothesis and demonstrate that variety of study skills lead to high academic achievement as compared to the use of few or negligible study skills. These results are in accordance with the previous researches which have highlighted that versatility of skills used by students are closely related to learning outcomes (Al-Hilawani & Sartawi, 1997; Blustein et al.; Hattie, 1999; Haynes, Comer, & Hamilton-Lee, 1988; Jones et al., 1993; Kern et al., 1998; Miller, 1991). These students are termed as self-regulated learners, possessing better study skills (Azevedo et al., 2004; Demirel & Turan, 2010; Masui & DeCorte, 2005; Thiede, et al., 2003). Onwuegbuzie et al. (2001) illustrates in their study that the students who experience academic difficulties exhibit a rarity of study skills as compared to their higher achieving counterparts.

The study skills were coded into eleven categories. The correlations between each category and academic achievement were investigated. There is evidence from the present study that students, who use range of study skills in a better way, achieve high grades than students who focus on only one or few skills. Hattie's (1999) meta-analysis established that the relationship between note-taking and learning outcomes was higher than memorization, organization, and rote-learning whereas some researchers found that note-taking is positively correlated with academic performance (Baker & Lombardi, 1985; Kiewra, Benton, & Lewis 1987; Lazarus 1991). Hattie (1999) also found strong relationship of time-management and academic success. Time-management has emerged as predictor of academic performance as cited in studies of (Britton & Tesser, 1991; Brophy, 1988; Macan, Shahani, Dipboye, & Phillips, 1990). Few other

researches related to self-regulated learning suggested the importance of time-management, concentration, and organization in enhancing academic performance (Kern et al.; Macan et al., 1990; Zimmerman & Martinez-Pons, 1990). The results of this study are consistent with these researches and exhibit positive correlation with time-management and concentration while disfavoring organization.

Zimmerman and Martinez-Pons (as cited in Seibert, 2002) found that high achievers use 13 or 14 strategies, as compared to low achievers. The present study supports this finding by providing a large size effect for reading skills, moderate size effect for summarizing and time-management skills; small effect size for perception, note-taking, denoting significant difference between mean of high achievers and low achievers, where low achievers lack or ignore study skills. Proctor, Prevatt, Adams, and Reaser (2006) also stated that students may experience difficulty in school/college, not because they lack ability, but because they lack good study skills. King (as cited in Seibert, 2002) established that summarization was used successfully as a study strategy for learning material from both written text and oral presentation. The studies show that writing boosts retention and ultimately affects performance (Bidjerano & Dai, 2007; Galbraith, 1992). However, the present study did not support this strategy for high academic achievement. Ausubel (as cited in Sleight and Mevis, 2006) preferred meaningful learning over rote learning but the results of the present study do not support this argument. The differences could be explained in the light of different cultural orientations or different educational set up.

It was observed that girls were superior to boys in academic achievement. This study showed that girls preferred using study skills as compared to boys. These findings are consistent with the research findings by Chavous et al. (2008), Cokley and Moore (2007), Zimmerman and Martinez-Pons (1990), and Willingham and Cole (1997). The mean difference is significant, depicting small effect size for time-management, reading, note-taking, summarizing, organizing, rote-learning, and miscellaneous study skills for girls. These findings show that cultural orientation and educational set up in the target area have not reflected any difference in relation to study skills and academic achievement in the prospect of various cultures.

It is desirable that students possess range of study skills. Though, regular study is an essential part of learning and cramming the night before examination works greatly. However, it is important to learn right set of study skills to use for a specific purpose in a clearly defined context. Due to the non-availability of standardized test covering all courses at secondary level, marks obtained by students in

the annual examination conducted by BISE, Abbotabad, were taken as achievement scores, raising concerns for reliability of these scores. The other limitation of this study was that it was conducted on single grade students in one specific locality. To have more reliable results, it is suggested that in future, research should be conducted on a population covering multi-grades and wide range of target area using standardized tests.

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