



RESEARCH PAPER

**Self-efficacy and Students' Academic Performance:
Examining Gender Differences at Higher Secondary Level**

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PAPER INFO	ABSTRACT
Received: January 11, 2020	This research aims to explore gender differences in self-efficacy and its relationship with students' educational performance. Self-efficacy is an individual's faith to achieve an objective or accomplish a level of performance within a given situation. Self-efficacy in academics is an essential indicator of success at higher secondary level study success. A better transformation to the university will experience students at the end of their secondary education by high academic self-efficacy. The study was descriptive, and survey design was used. Students studying in 12 th class in public sector higher secondary schools served as a population for this study. A questionnaire was designed as a data collection tool for obtaining information from a sample consisting of 1507 students from 18 higher secondary institutions of nine districts of Punjab. Results showed that male science students feel more confident about their success in the final output as compared to female science students studying at the higher secondary level. Gender difference in self-efficacy was a significant reason which affects their academic performance.
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Introduction

Self-efficacy is explained as the belief of a human being in his/her capacity to express behaviors essential to produce a particular level of accomplishment. It points out an individual's faith in their skills to bring out the defined level of performance. It influences the realities that an individual faces in his/her life (Bandura, 2000; Gecas, 2002). In pupils' lives perspective, self-efficacy plays an integral part (Kandemir, 2014). Self-efficacy plays a significant role in accomplishment, which brings improvement in life.

Self-efficacy describes the belief of a person's to achieve a specific level of a task (Oettingen, 2012). In an educational environment, academic self-efficacy is interpreted as the ability of a student to do particular tasks. These tasks include an answer to a question, taking a test, or preparing assignments. Educational institutions might look for the means to upgrade their students' self-efficacy to carry out the identified objectives (Pajares, 2008; Zimmerman, Bandura, & Martinez-Pons, 2008). Self Efficacy is inevitable in comprehending knowledge of specific subjects and bringing out required tasks. It leaves a strong effect on the learner's attitudes and concepts dealing with the topics of their interest in the learning process. To achieve success in study, self-efficacy is a fundamental element because of its impact on both achievement and retention. While things could become easier for people because of motivation, self-efficacy plays its part in getting inner satisfaction because self-efficacy that rules over the learner's perception.

A vital goal of the learning process should be to enhance the self-efficacy of students. This will help them to be prepared for further education. Education and learning are we consider education and learning important elements for human beings. We accept it as an undeniable matter and the right of each individual. In educational policies at the national level in many countries, it encompasses the whole population in a system to achieve social expansion (National Planning Commission, 2018; Timperley, 2015).

In any society, there are no hindrance individuals to get education according to their capabilities, wills, and choices. However, there are areas and subjects, e.g., business, mining, accountancy, computer technology, engineering, and mathematics, where gender differences in terms of performance exist (Cunningham & Brosch, 2012). These differences appear in whole teaching-learning experiences.

Usually, girls are more careful as compared to lazy boys; but when the emphasis is exerted on cognitive skills, girls use rote memory while boys try to use their power of reasoning (Hofsted., Hofstede., & Minkov, 2010). Behavioral theories explaining human motivation accepted self-efficacy as it performs a significant part when the question of selecting the gender-specific choice arises. According to the social cognitive theory, individuals always prefer those jobs in which they feel comfortable. We believe that personal competencies set the direction for any gender (male or female) to choose the right lifestyle, proper career, and the field.

It is a public debate about two main roles of nature and nurture in the learning process. This debate also includes how the learning of female students differs from that of male students and how early experiences of schooling play its role. It is believed by many teachers who relate the most noticeable gender variance to work.

Gender can be related to the overall gesture of an individual about one's sex. It includes either active or passive roles or different behaviors. It also includes a set of preferences for multiple characteristics (Crisp, 2010; Goodwin & Darley, 2008). The perception of gender varies along with its capacity to occupy an extensive range up to social traits and norms. It also includes biological behaviors in describing gender. Also, it can be associated with roles accepted, many traits, and manifold activities. It depicts a wide range and the set of innate desires, adopted beliefs, and personal meanings. It can take these from the external environment (Fink, Trail, & Anderson, 2002).

Cross-cultural researches suggest that if there is a difference in cultural impact, we have found that characteristics can be different in gender. We cannot ignore this important fact. This states that differences between sexes are built-in, which appear in response tendencies, ability, personality (Piquero, Farrington, Welsh, Tremblay, & Jennings, 2009). So, gender is a specific set of physiological traits. Gender-related characteristics always follow particular patterns for females or males related to any species or class.

Because of cultural structuring and societal norms with reference to our society, the females have been striving hard to earn their deserved position. The values and practices in society have put women on a secondary level compared to men, and they are not treated equally. This leads to a result in loss of confidence and poor perception building among female students, which reflects in their academic performance.

The vulnerability of female students further leads to consequences such as stress and low self-esteem. With such adversities being associated with one gender, the difference in academic efficiency has become clear.

In simple words, we can describe self-efficacy as a self-judgment process of oneself. According to Bandura (1986), Self-efficacy is pointed towards innate capabilities and individuals' assessment to help and support, and to organize overall learning efforts for accomplishing most results. In a wide concept, it is the attribute of an individual personality that prone them forward, showing their ability to perform many practical tasks.

A research study by Schunk and Meece (2006) suggested that self-efficacy differentiates among feelings and patterns of individuals. We also associate it with their acting and thinking level. It can be associated with a sensation where individuals assume the variance of high and low. They explain further that the low sense of self-efficacy is a profound concern along with deep depression. On the other hand the self-efficacy of high-level outcomes at a lower level of fretfulness, anxiety, and vulnerability (Maddux, 1995; Tierney & Farmer, 2011).

Self-efficacy is correlated with cognitive processes, including skill and ability of thinking. Self-efficacy belief can improve the cognitive process. It affects overall educational accomplishment, which enhances the performance of individuals. Self-efficacy can be assumed as "self-related cognition" that makes up a very vital and chief element of the self-motivation process. It is believed that there can be different levels in self-efficacy (high to low), and these levels support to elevate or hinder the motivation process. It is also undeniable that individuals have a high self-efficacy level, which allows them to make vital tasks and achieve objectives. It also depicts the personal attitude towards optimism in contrast when individuals who express a pessimistic attitude, revealing that their self-efficacy is at a lower level.

Conferring to the research of the late 1970s, in a social and cognitive context, Bandura (1977) presented a well-known theory of self-efficacy. This theory has been much more convenient to investigate the construct of self-efficacy. These researches believe that self-efficacy is a noteworthy characteristic of human personality within the background of a social cognitive context. Regarding diverse methods when applied regarding clinical psychology, we observe varying results when this theory is taken under context.

Regarding some investigations conducted in and after 2000, the social cognitive context of the self-efficacy theory reveals a new paradigm. Bandura (1997) has investigated that self-efficacy and its views can have an emotional impact on every single feature of life. In an educational context, self-efficacy can be assumed for any learner or student as a fundamental tool for achieving academic performance. At the college level, self-efficacy can assist in setting opinions about students along with their academic capabilities, keeping in view four central sources:

Academic self-efficacy has also been investigated by Kitsantas, Cheema, & Ware (2011). They stated that individuals could participate in almost all such activities where they feel competent. Students who have low self-efficacy always try to avoid the activities where they can sense their incompetence. Further, it is also a fact that possesses a higher rate of self-efficacy; Individuals would like to go for stronger performance by depicting actual and independent ability. Students who possess self-efficacy of a higher level, they rush towards tough performance according to expectations. In contrast to students possessing low self-efficacy unable to achieve their true potentials

A thorough review of the related literature shows that self-efficacy plays an imperative role in the educational attainment of individuals. Considering that students have different study environments in which they have to carry out their related activities. Faith regarding one's capability may lead to a significant effect on learning and achievement. The complexities related to education systems and the environment has been increasing over the years. Academicians have been keen on

understanding what adversities prevail in the environment that could be controlled and managed (Savolainen, Engelbrecht, Nel, & Malinen, 2012). Based on this study, it will become easier for academicians and practitioners to realize if they needed to portray a different behavior and level of effort for male and female students. Understanding the aspect of gender difference with relationship to self-efficacy belief may provide a better view of it. It explains how male and female students to be treated in the same manner, or they require extra effort. While several studies have been carried out concerning self-efficacy and academic performance, fewer researchers have carried out to examine their relationship with each other. This study, therefore, focused on examining the relationship of self-efficacy with the academic achievement of students at the higher secondary level. This study also examined gender differences in terms of the level of self-efficacy.

Research Questions

This study examined students' level of self-efficacy and academic achievement based on their gender. Keeping in view the main objectives of the research, three sets of research questions were developed to comprehend the nature and context of gender difference in self-efficacy and academic achievement.

1. What is the perception of participants regarding their level of self-efficacy
2. Is there any difference in the academic performance of male and female students?
3. What is the relationship between students' academic performance and self-efficacy?

Methodology

This research study was descriptive, and survey design was used for data collection. All the male and female students who were studying in 12th class, in the public sector, higher secondary schools of Punjab served as a population for this study. The rationale for including 12th class students was their availability, and also to explore the relationship between their performance in 10th and 11th class and self-efficacy based on their gender. To select the sample, the researcher used a cluster and stratified random sampling technique.

Punjab province comprises 36 districts. Initially, nine districts were chosen randomly to serve as a cluster. Afterward, using a stratified random sampling technique, two academic institutions (one male, one female) were selected randomly from each district, thus making a total of 18 academic institutions. Participants were selected randomly from the students present at the spot when the research tool was administered. A total of 1507 students participated in this survey research conducted in 18 schools of nine different districts of Punjab.

For obtaining information from sample respondents, a questionnaire was used as a research tool. The questionnaire comprised two sections. The first section was designed to seek demographic information of the participants. The second section was containing 15 closed-ended items, designed on a five-point Likert scale, ranging from SD (strongly disagree=1) to SA (strongly agree=5). These 15 items were based on the literature, representing various aspects of self-efficacy. The questionnaire was found to be highly reliable, with Cronbach's Alpha value of 0.76. The tool was then validated through experts' opinions. A pilot study was conducted to assure the reliability and validity of the instrument. Experts were taken from Bahauddin Zakariya University Multan, while pilot testing was done by administering the tool with 53 female and 57 male students. Appropriate changes were brought into account based on experts' opinions as well as the results of the pilot study before final administration. The final questionnaire was administered personally by the researcher. For the analysis of closed-ended items, the mean, standard deviation, correlation, and independent samples t-test were calculated.

Result and Findings

Keeping in view of the main objectives and research questions of the study results are presented in this section. Descriptive and inferential statistics were used to analyze data. To determine the significance of the difference between the mean scores of the participants based on gender, an independent sample t-test was applied. Moreover, the Pearson Correlation coefficient was used to find the relationship between self-efficacy and academic achievement of students at the higher secondary level.

Perceptions of Participants regarding Self-efficacy

To examine participants' perceptions regarding their level of self-efficacy, the overall mean and the standard deviation of data were calculated, and results are presented in Table 1.

Table 1
Self-efficacy and Gender-Based Statistics

Gender	N	Mean	SD	Std. Error Mean
Male	808	3.95	0.53	0.019
Female	699	3.90	0.47	0.017

Table 1 show that the value of mean for males is higher than females. It also indicates that male students have a self-efficacy of a high level on which they can complete different science-related activities. To find the difference in self-efficacy level of male and female participants, an independent sample t-test was executed, and results are presented in Table 2

Table 2
Difference between the levels of self-efficacy of the participants

Gender	N	Mean	T	df	Sig. (2-tailed)
Male	808	3.95	1.83	1504	0.067
Female	699	3.90			

Table 2 indicates the slightly higher value of mean for males, but the difference was not significant in the self-efficacy level of males (M= 3.95) and females (M=3.90) condition: $t(1504) = 1.831$, $p = 0.067$ as p-value is greater than 0.05. It shows that self-efficacy level of perception on the base of gender is not different for both groups and the observed difference might be due to some sampling error

Gender difference and Academic achievement

The second research question of this study was to explore the impact of gender on the academic achievement of participants. For this purpose, an independent sample t-test was conducted based on the Intermediate Part I score of female and male students. The result is shown in the following table.

Table 3
Comparison of Intermediate Part I Scores based on gender

Gender	N	Mean	T	df	Sig. (2-tailed)
Male	808	352.41	1.31	1505	0.19
Female	699	345.38			

Table 3 shows that the mean score of males obtained in Intermediate Part I is 352.41, while the mean score of females is 345.38. This asserts that the mean score is slightly greater of males than females. The result shows that difference in the academic achievement of males (352.41) and females (345.38) is insignificant as p-value 0.19 is greater than 0.05 with $t(1505) = 1.312$

Association between Self-efficacy and Academic performance

To investigate the relationship in self-efficacy and academic performance, the Pearson coefficient of correlation was calculated, and results are presented in the following table

Table 4
Correlation between Self-efficacy and Academic Achievement of the Students

	Part I score	Self efficacy	matric score
Part I score	1		
Self-efficacy	0.112**	1	
Matric score	0.41**	0.09 **	1

**Correlation is significant at the 0.01 level (2-tailed)

Table 4 shows inter-correlation among matric score, self-efficacy, and the intermediate part I score, which was calculated by using the Pearson Correlation Method. The values of "r" in all the three cases were between 0.09 and +0.41, which indicates a relatively low degree of relationship between these variables. It was also observed that the values of the 'r' for matric score & intermediate part I score was relatively higher $r=0.41$. This analysis showed positive correlations were observed between students' academic achievement scores and self-efficacy as $r=0.112$, 0.41 , and 0.09 for intermediate score and self-efficacy, matric score and intermediate score, and self-efficacy and matric score respectively.

It further depicts the direct relationship between variables, which states that the higher the self-efficacy of the individuals, the higher the academic performance.

Overall this data set shows a positive / highly positive correlation between student's self-efficacy level and academic performance. It has been found that self-efficacy level affects the academic performance of male and female at the higher secondary school level.

Discussion

This study explored gender differences in self-efficacy and academic achievement of higher secondary level students. The research investigates the relationship of participants' level of self-efficacy to their gender. The findings reveal positive perception, though not significant in the respondent's level of self-efficacy according to their gender. Gender difference in the self-efficacy level is a critical aspect. It depicts how individuals may portray a varied inclination towards learning (Panadero, Tapia, & Huertas, 2012). A study conducted by Pintrich and De Groot (1990) showed that female students have lower self-efficacy levels than their male counterparts. It is a fact that gender discrimination occurs in Pakistani society. Cultural and social reality in Pakistan leads to gender differences. Males considered having better capacities to perform difficult tasks as compared to females. The males have a dominating role. The reason for this is the attention given to them by their families as compared to females. Males enjoy the freedom of doing whatever they like. In educational settings, male students have a fair chance to work with other students in a cooperative environment as compared to females. So, their self-efficacy level is high when compared to females who face several restrictions and limitations. The self-efficacy theory also confirms this concept. It explains that an individual is interested in tasks in which he/she believes that more likely he/she will become successful.

Male students showed self-efficacy at a higher level in contrast to female students, which has led to an impact on their academic performance. It was found that participants of the study believed that gender difference does not affect academic performance in future education. A study by Usher (2009) depicts male participants scoring higher points than females. The results of this study are the

same as the study conducted by Ayotola (2012). This research showed that there is no significant difference between male and female students' academic performance.

To find an association between self-efficacy and academic achievement, the Pearson correlation coefficient was calculated. Results showed a positive relationship between self-efficacy level and academic achievement. It shows that a higher level of self-efficacy results in better performance of academic activities. The students having a higher level of self-efficacy accomplish a better level of academic performance. Students having lower self-efficacy levels and lack of self-belief shows less interest in facing tasks they think difficult (Pajares 2000). Several studies have confirmed that self-efficacy plays a vital role in academic performance (Hanestad 2007, Stienhont, Jaggars, and Dolbier 2010. So, an increased level of self-efficacy is essential for students' academic achievement. Teachers and administrators of higher secondary education should try to find methods to enhance the self-efficacy level of students irrespective of their gender. The self-efficacy level also affects the choice of subjects at a higher secondary level. This will help them achieve better and improved academic performance (Davidson, Fieldman, and Margalits, 2012).

Conclusion

In response to objectives and research questions of study following conclusions were drawn on the basis of results. This study concludes that there is a positive association between self-efficacy level of male and female students at the higher secondary level. Moreover, this difference was not statistically significant. Although many students are found neutral about some questions, male science students in contrast to female science students possess a self-efficacy of high level. No significant gender difference in academic achievement depicts that gender stereotypes do not affect the subject choice and academic performance of students. The findings revealed that there is a positive relationship among the self-efficacy of higher secondary level students, along with their academic performance. A high level of self-efficacy has been observed in male students as compared to female students. Male science students feel confident about their success in final exams as compared to female science students. A higher level of self-efficacy has been considered as one of the major factors that allow male students to perform better than females.

Recommendations

In view of the findings of the study, it is recommended that:

- A positive relationship between self-efficacy and academic achievement suggests that attention should be given to guide students in the choice of suitable subjects at the start of the first year. So, the results will be helpful for teachers and administrators who are involved in teaching and learning at this

level. Results of this study suggest that teachers should encourage male and female students to select science-related subjects

- There are many limitations, but the results provide bases for future studies to find the relationship between self-efficacy and academic performance. Using different research methods, a larger sample, and different demographic better results can be obtained.

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