

Impact of Teacher Self-Efficacy on Secondary School Students' Academic Achievement

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Abstract

The study of self-efficacy and its impact on human performance has intrigued many scholars during the last two decades, for example, Clayson and Sheffet, 2006; Nauta, 2004; Muijs and Reynolds 2001; Bandura, 1997 and Soodak and Podell, 1993. This study was conducted with the objective to find out the impact of teacher self-efficacy on the secondary school students' academic achievement. For this purpose, sixty (60) secondary school teachers and a hundred (100) secondary school students in Chiltan Town of Quetta city were randomly selected. To collect the data, teacher self-efficacy questionnaire for teachers was used and to measure students' academic achievement a test was developed. Data were analyzed through Pearson Correlation and Multiple Regressions. The findings of the study revealed that teacher self-efficacy has a positive impact on the students' academic achievement. The results of the study and their pedagogical implications have been discussed, and recommendations have been provided for further researches.

Keywords: academic achievement, pedagogical implications, secondary school, self-efficacy

Introduction

The class teacher's role has a huge impact on the learning process of students. Basically, teachers are vital for success or failure of an educational system; they implement the policies of an education system on the ground. Thus, the more competent the teachers are, the more effective is the educational system. If the teachers are competent, they will impact students' performance. Teacher competency is based on self-efficacy (beliefs on own abilities) and lack of self-efficacy causes many psychological problems such as low confidence level and low self-esteem. Bandura (1997) defines self-efficacy as the organization of social, technical, and behavioral skills to achieve targets. Self-efficacy in the context of teaching refers to the ability to determine the outcomes of the students' work.

Researchers relate self-efficacy with potential and actions of the doer. Self-efficacy highly influences an individual's action, effort and the way of accomplishing tasks resulting in enhanced abilities and makes one more confident about the desired results. Bandura (2002), states that forethought and outcome expectations can help to master a situation and achieve the desired targets. It has been noticed that teachers with a high level of self-efficacy have a positive attitude towards everything. They always have control on their emotions, as a result they seldom display their anger in front of their students and this attitude assures high achievement. Teachers with high level of self-efficacy are open to new methods and have the ability to adopt new techniques.

This is a century of inventions and innovations, thus we cannot go forward with old teaching techniques. It is vital to

introduce creativity in teaching methods and it is also the need of the time to make students think analytically. In the past, a teacher's responsibility was only to teach (Gul, 2014); but today, special skills need to be taught to the students like decision making, critical analysis, and a balanced mindset, which will help students in both professional and personal life. But for this, a teacher must have one quality among many other qualities which is teacher self-efficacy (TSE); confidence to accomplish such tasks. The study at hand aims to highlight self-efficacy skills hidden in teachers as most of them do not utilize these skills as they are unaware of them. The teachers must realize the significance of teacher self-efficacy beliefs and apply them practically in their classrooms. Keeping in view the situation, this study was designed to know the impact of teacher self-efficacy on the academic achievement of the secondary school students.

Pakistan as a whole, but Balochistan in particular, is facing a great shortage of quality teachers in terms of self-efficacy beliefs. Most of the teachers do not utilize their efficacy skills while they are in the field. Similarly, students are not being educated properly to meet the national and international educational changes. They are lagging far behind in all walks of studies due to typical teaching learning strategies applied in the government run schools and the condition remains very much the same in privatized schools too. Most of the teachers here do not capitalize their dormant qualities and are still unaware of their hidden potential. There is a great need to make them aware of their self-efficacy beliefs, so that they can practically implement them in their classrooms. In this scenario, the study was conducted on secondary school teachers (SST) about their self-efficacy beliefs which was designed to gauge the impact

of teacher self-efficacy on the students' academic achievement. The study also highlights which aspect of teacher self-efficacy can be the best predictor for the students' academic achievement. The research study was carried out in the government boys and girls secondary schools of Chiltan Town of Quetta District. The following hypotheses were tested:

- H1. There is a significant relationship between teacher self-efficacy (TSE) and students' academic achievement.
- H2. There is a significant relationship between teacher self-efficacy belief regarding student engagement and student academic achievement.
- H3. There is a significant relationship between teacher self-efficacy belief regarding instructional strategies and students' academic achievement.

Literature review

Self-efficacy is self-belief of teachers on their capabilities and trust they have on their methodologies to accomplish the tasks. In particular cases, self-efficacy gives a surety to teachers that they are able to transfer their knowledge to the students successfully. Teachers with a greater sense of self-efficacy beliefs are more willing to experiment new methods of teaching to meet the requirements of their students. Thus, sense of efficacy in a teacher has a strong positive impact on student performance (Gosky, 1988; Tschanne & Woolfolk, 2001) and if teachers have a low sense of self-efficacy, their students will show poor performance.

Woolfolk (1998) says that self-efficacy is also related to the result of activities used in the classrooms. If teachers accomplish the task successfully, self-efficacy will increase while low level of teachers' self-efficacy leads to failure. According to Woolfolk (1998), the most influential source of self-efficacy information is said to be the mastery level experiences of an individual, which one experiences directly. If a person accomplishes a given task, it means that self-efficacy beliefs are being promoted positively. On the other hand, failure displays a low level of self-efficacy. Bandura (1997) stresses that the factors which affect self-efficacy include physiological emotions like stress, excitement or joy.

While performing a particular task, physiological and emotional conditions like anxiety, enthusiasm or joy affect individuals' beliefs about their capabilities. Bandura (1997) implies that the force of physical and emotional reactions is not so crucial as the beliefs of these reactions. Bandura shared the following four sources of self-efficacy which are very important for the teachers:

1. Mastery teaching experience
2. Vicarious experience
3. Social persuasion
4. Physiological and emotional behaviors

Mastery teaching experiences

The most important source of self-efficacy is mastery teaching experiences; it is a scenario in which the teachers share their own success stories; thus, feeling confident about their methods, which proves that they are competent and believe in their

capacities. Success creates robust beliefs in their methods and in themselves, which leads to having a strong faith in their abilities and the activities they choose. If these activities tend to be successful each time, ultimately they raise the level of teachers' self-efficacy and the activities fail, they experience lower self-efficacy. If teachers have low self-efficacy at the beginning, it will create doubts and make their techniques non result oriented; therefore, self-reflection and self-belief also play a role in self-efficacy.

Vicarious experience

It is a process of learning from other's experiences, especially from the successes of other teachers. These success stories generate positive thoughts among other teachers and motivate them to do something different and creative. The behavior of successful teachers puts a significant effect on other teachers, thus enhances effectiveness.

Social persuasion

Teacher self-efficacy through social persuasion can also be improved by giving appreciating and encouraging remarks to boost the confidence level of the teachers. If they are supported by social elements of the society, a clear improvement can be seen in their attitude towards TSE.

Physiological and emotional states

The physiological and emotional behavior of teachers also affects TSE. If they are confident and enthusiastic about their

actions, they will get positive and outstanding results. On the other hand, if teachers are depressed or anxious about their actions, this will produce negative results. Teacher confidence is highly significant because it has the ability to change the results. Even well-educated and qualified teachers are not successful if they have depressing thoughts or lack of confidence. Self-confidence has a strong relationship with self-efficacy; in a way both are directly proportional to each other.

Ashton and Webb (1986) further explain that teachers who have a higher level of self-efficacy are more organized, have a greater skill of instruction and questioning, have better abilities to explain and can solve academic problems easily. On the other hand, teachers with low level of self-efficacy seem more confused, feel threaten to be questioned, cannot maintain tasks and feel difficulty in countering student affairs. Hence, students' performance is highly associated with TSE.

Tournaki and Podell (2005) published records of more than 300 teachers about the influence of their behavior on student success and teacher vision and predictions about students. Their findings revealed that teachers with high efficacy predict most of the time accurately and in case of wrong predictions, they somehow try to understand why they predicted incorrectly; whereas teacher with low efficacy mostly predict wrongly about their students and sometimes even got harsh in difficult situations.

Mojavezi (2012) conducted a study with the similar topic in four different cities of Iran having 80 senior high school teachers and 150 senior high school students. He administered TSE scale to

gauge teacher sense of self-efficacy beliefs and a questionnaire to weigh students' motivational level. He then divided the teachers into groups according to their level of self-efficacy and discussed the impact of TSE on the students' motivation and achievement. He found that there is a significant correlation between TSE and students' academic achievement. His findings were also in line with Bandura's observation (1994) that teachers with high sense of self-efficacy about their competence can motivate their students and improve their cognitive development. For students' motivation, he found that higher the self-efficacy of a teacher, the higher the motivational level of the students would be. The overall results suggest that TSE has a positive impact on students' behavior, learning and achievement.

Shaukat and Iqbal (2012) conducted a study on TSE as a function of student engagement, instructional strategies and classroom management and found that there is no significant difference between self-efficacy effects of male and female teachers; however, male teachers were comparatively better than female teachers in classroom management. The reason for this, as stated in the study was male teachers usually maintain a more strict discipline in the classroom and can control the disruptive behavior of the students better than female teachers do. The researchers also found that the teachers with higher education have higher sense of self-efficacy. They maintain their classroom far better than the teachers with low qualification. Another interesting finding of the research was that temporary teachers could control their classes better than the regular or permanent teachers. This may be because the permanent teachers have more job security and safety, rather than the temporary teachers. It was also found in the study that the elementary

teachers expressed significantly better classroom management than secondary teachers. This might be because the elementary teachers have more time to spend with their classes as compared to the secondary teachers because secondary teachers have many other responsibilities (like administrative and extracurricular) to handle and manage. The overall findings of this particular research suggest that TSE has positive impact on the learning and achievement of the students and male teachers with higher qualification, are more likely to manage their classroom better than the other teachers.

In the same context, Ahmed, Khan and Rehman (2015) conducted a comparative study to investigate the sense of teacher efficacy between male and female school teachers of District Attock. The study also found that TSE is important to manage students' learning and bring a positive change in their educational career. However, the study found that gender affects self-efficacy of teachers and female teachers have better self-efficacy skills than male teachers. Female teachers were found better and had higher sense of self-efficacy beliefs to influence the subscales of teacher self-efficacy like: instructional strategies, student engagement and classroom management. A significant mean difference was found in the male and female teacher self-efficacy. The overall discussion suggests that teacher self-efficacy is a better predictor to enhance students' learning.

Tai, Hu, Wang and Chen (2012) carried out a study with five different hypotheses. The researchers tried to relate TSE with student learning satisfaction, student learning outcome, student learning satisfaction with teaching process and student learning outcomes with teaching process. The researchers found that TSE

and the teaching process have a strong association with the learning satisfaction of students. The overall findings suggest that TSE beliefs do have positive and significant influence on students' learning, satisfaction and achievement.

Rodriguez, Regueiro, Blas, Valle, Pineiro and Cerezo (2014) also researched on TSE and its relationship with students' affective and motivational variables in higher education. The study was conducted with a sample size of 95 teachers and 1924 students from given Spanish public Universities. Teachers were divided into three distinctive profiles: high self-efficacy, medium self-efficacy and low self-efficacy. The results of the study suggested that teachers with intermediate self-efficacy perception had more learning oriented students than the teachers who had high self-efficacy. The teachers who are over confident of their teaching capabilities had less command to engage students in studying to learn. The students of such teachers were found more indifferent to the subjects, less confident about the results of their efforts, presented low perception of self-efficacy. Such students valued the contents of the subject less and were more anxious than students of teachers with a moderate perception of self-efficacy. The overall findings of the study suggested that more than 40% of the university teachers believed that they were more capable, encouraging and could make their students think critically and creatively. Teachers with high self-efficacy believed that they were capable of answering even the most difficult questions by the students in the classrooms. They also believed that they could satisfy the students well by producing relevant explanations or examples when their students seemed to be confused. While summing the study, the researchers stated that the impending contribution of TSE in students' achievement and performance will highly be dependent

on the classroom conditions.

Methodology

To know the impact of teacher self-efficacy on secondary school students' academic achievement, an exploratory quantitative research design was chosen. Quantitative research is basically known as an inquiry into a social problem, where a phenomenon is explained by gathering numerical data that are analyzed using mathematically based methods (Aliaga & Gunderson, 2002).

In this study, quantitative paradigm was assumed since testing and measuring a theory through statistical procedures indicates towards quantitative inquiry (Creswell, 1994). "A quantitative researcher views reality as an object out there, independent of the researcher...through a questionnaire or an instrument" (Creswell, 1994, p. 4). Besides, quantitative research, as Brannen (1992) argues is carried out to discover how many and what kinds of people in general have a particular characteristic in the sample population. Thus, the methodological design of this study, having the aim of studying the relationship between TSE and students' academic achievement was considered to reflect the principles of quantitative methodology.

Population

All male and female secondary school teachers and all male and female students of grade 10 of Chiltan Town, Quetta were the population of the study.

Sampling

Adopting the systematic random sampling techniques, ten boys and girls secondary schools were selected out of which 60 (N=27 male 45% and N=33 females 55%) teacher participants and 100 (N=50 boys and N=50 girls) student participants were randomly selected. Participants were personally approached and the questionnaires were filled in the presence of the researcher. The sample size of teacher participants was later reduced to 10 English subject teachers to judge the academic achievement of students in the subject of English; therefore, one English subject teacher, from each school was selected and ten student participants were selected.

Table 1

Frequency and percentage of the teachers' age

Age	Frequency	Percent
Age 20-30	8	13.3
Age 31-40	37	61.7
Age 41-50	10	16.7
Age 51-60	5	8.3
Total	60	100.0

Table 1 highlights the ages of the respondents which interprets that the highest numbers of respondents are between the age of 31 to 40 years (61.7%) and the least number of the respondents are between the age of 51 to 60 (8.3%).

Table 2

Frequency and percentage of the teachers' qualification

Qualification	Frequency	Percent
BSc	1	1.7
MA	6	10.0
MSc	1	1.7
MA, M.Ed	32	53.3
MA, B.Ed	5	8.3
BA, M.Ed	1	1.7
MSc, B.Ed	3	5.0
MSc, M.Ed	6	10.0
M. Phil	2	3.3
BS (Hons)	2	3.3
MS	1	1.7
Total	60	100.0

Table 2 highlights the qualifications of the respondents which indicates that the majority of the respondents 32 (53.3%) out of 60 (100%) possess qualification of either an M.A or an M. Ed.

Table 3

Frequency and percentage of the teachers' experience

Experience	Frequency	Percent
1-5 Years	11	18.3
5-10 Years	21	35.0
10-15 Years	13	21.7
15-20 Years	3	5.0
20-25 Years	7	11.7
25-30 Years	4	6.7
30-35 Years	1	1.7
Total	60	100.0

Table 3 highlights the frequency and percentage of the respondents' experience. The majority of the respondents 35% have got the experience between 5-10 years, while 1.7% had experience of 30-35 years.

Research instrument

The researcher adopted Teacher Self-efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (2001). It is considered to be one of the best instruments to gauge teacher self-efficacy because it is a standardized instrument and has been used in many different researches of the same nature. Before adopting this instrument, different experts were approached and their opinions were taken. There are 24 questions in the questionnaire which are further divided into three sub-scales: classroom management (8 questions), instructional strategies (8 questions) and student engagement (8 questions) to judge teacher self-efficacy. It has 9 points Likert scale labeled with the notations: nothing, very little, some influence, quite a bit, and a great deal. For the ease of the participants, the instrument was later converted into 5 points likert scale from nothing (1) to a great deal (5). The overall reliability (Cronbach Alpha) of the instrument was .94.

Procedure

Written permission was obtained from the Education Department to visit ten secondary schools of Chiltan Town. In the first phase, all teachers were met personally and information about the purpose of the visit and the aims of the research were shared with them. The researcher also ensured anonymity of the data

furnished by each teacher. All the schools were visited one by one, and the teachers were provided with teacher self-efficacy scale. The teacher participants individually completed the scale in a peaceful atmosphere in the presence of the researcher. The researcher was always there to help them whenever they faced any difficulty while filling the questionnaire. In the same way, all ten schools were visited separately and the researcher had the questionnaire filled.

In the second phase of the research, the researcher developed a test paper to estimate the academic achievement of the students. The test was based on their English textbook of grade 10 and was of the same pattern which had been considered valid in the annual board examination. For the validity of the test paper, the researcher got it checked by the experts, who were then teaching English and were involved in preparing question papers for the annual board examination. Some valuable comments were given on the test paper and changes were made accordingly. In order to pilot the testing, 20 students were randomly selected from the same population (10 boys and 10 girls), and they were asked to attempt the test in the presence of the researcher. The reliability of the test (Cronbach Alpha) was .89.

Analysis of data

SPSS 20 was used to analyze the data by applying Pearson product-moment correlation coefficient and multiple regression. The following hypotheses were tested:

H1: There is a significant relationship between teacher self-efficacy (TSE) and students' academic achievement.

Table 4*Overall perceptions of teachers regarding their self-efficacy*

	Mean score	Standard Deviation
The responses of the respondents about Teacher Self-efficacy	4.1556	.54720

Table 4 clearly defines the overall mean score and standard deviation of the teacher self-efficacy. The mean score 4.15 (SD = .54) indicates positive perceptions of the teachers regarding teacher self-efficacy.

Table 5*The results of correlation between teacher self-efficacy and student academic achievement*

Variables	N	M	SD	Sig. (2-tailed)	R
Teacher Self-efficacy	10	.41	1.26	.011	.253*
Academic Achievement	100	36.26	6.70		

*Correlation is significant at the 0.05 level (2-tailed)

** $p \leq .05$

Table 5 highlights the correlation between teacher self-efficacy and academic achievement of the students. There is a positive relationship between teacher self-efficacy (M=.41, SD=1.26) and student academic achievement (M=36.26, SD=6.70), $r = .253$, $p \leq .05$, $n = 100$. It can be observed through the results

that there is a correlation (.253) between teacher self-efficacy and academic achievement of the students.

H2: There is a significant relationship between teacher self-efficacy belief regarding student engagement and student academic achievement.

Table 6

Relationship between teacher self-efficacy belief regarding student engagement and student academic achievement

Variables	N	M	SD	Sig. (2-tailed)	R
Student Engagement of Teacher Self-Efficacy	10	.41	1.27	.012	.251*
Academic Achievement	100	36.26	6.70		

*Correlation is significant at the 0.05 level (2-tailed)

** $p \leq .05$

Table 6 highlights the correlation between teacher self-efficacy belief regarding student engagement and student academic achievement. There is a positive relationship between teacher self-efficacy (M=.41, SD=1.27) and academic achievement (M=36.26, SD=6.70), $r = .251$, $p \leq .05$, $n = 100$. It can be observed through the results that there is a correlation (.251) between teacher self-efficacy belief regarding student engagement and student academic achievement. The result indicates that there is a positive and significant correlation between both variables.

H3: There is a significant relationship between teacher self-efficacy belief regarding instructional strategies and students' academic achievement.

Table 7

Relationship between teacher self-efficacy belief regarding instructional strategies and students' academic achievement

Variables	N	M	SD	Sig. (2-tailed)	R
Instructional Strategies of Teacher Self-Efficacy	10	.40	1.22	.012	.249*
Academic Achievement	100	36.26	6.70		

*Correlation is significant at the 0.05 level (2-tailed)

** $p \leq .05$

Table 7 highlights the relationship between teacher self-efficacy belief regarding instructional strategies and students' academic achievement. There is a positive relationship between instructional strategies of teacher self-efficacy beliefs ($M=.40$, $SD=1.22$) and student academic achievement ($M=36.26$, $SD=6.70$), $r = .249$, $p \leq .05$, $n = 100$. It can be observed through the results that there is a correlation (.249) between the two variables.

Discussion

The results indicate that there is a positive relationship between teacher self-efficacy and student academic achievement. The results of the study in hand are consistent with the previous

researches which have been done on the same topic. It is the main external force which increases self-belief of the students about learning, which will lead them to achieve their academic goals. It also translates that higher the level of teacher self-efficacy, higher student academic achievements will be. The efficacious teacher shaves a positive impact on their students learning, improvement and the achievement. The result also signals that there is a positive correlation between independent and the dependent variables, which reflect that the hypotheses of the study have been accepted.

It has been found that self-efficacy is self-belief about doing something positively and successfully. It increases the confidence level of the teachers as well as the students as Kreitner and Kinicki (2007) also state similar outcome that if an individual has self-belief he/she can perform a given task easily and can achieve the goals without any doubt than a person who is in a dilemma or has some ambiguity about a particular task.

Regarding self-efficacy beliefs, teachers had almost the same mind set as cited in Bandura's (1989) social cognitive theory who explained that self-efficacy greatly influences the performances of the individuals. It was also found in the results that the efficacious teachers are more composed in controlling and solving problems or the given tasks. They can respond positively even in the most difficult situations. These findings are consistent with the work of Woolfolk, Rosoff, and Hoy (1990), who found that the quality of self-efficacy helps teachers to encounter difficulties more effectively. Muijs and Rejnolds (2001) have recognized that teachers with high self-efficacy can guide their students better to accomplish their tasks. As the teachers themselves feel confident likewise, they want to see

their students confident too.

Ross (1992) conducted a research on 7th and 8th grade class teachers and students to determine the relationship of student performance and teacher self-efficacy. He concluded that students achieve well if their teacher is confident and has good contacts with the students; therefore, self-efficacy of teacher for sure brings positive change in student effectiveness.

If teachers try hard, they can get connected to even the most difficult and un motivated students. This finding is consistent with the RAND Corporation study (Armor et al., 1976) in which it was accepted that teachers who agreed with the above mentioned statement, expressed self-belief upon their skills as teachers. When any difficulty occurs for the students in the learning process, they can overcome the factors that could make learning process difficult.

The study has also proved that self-efficacy possessed by a teacher, improves the students' academic achievement and they obtain better grades in their examination. This finding of the study is in line with the findings of (Armor et al., 1976; Ashton, 1984; Gibson & Dembo, 1984) who mentioned that teacher' self-efficacy directly improves the students' academic achievement in shape of their annual grades. Teachers with more self-efficacy can understand students easily by reading the pulse of their students through their sharp observation since it is the key to success in class. All such experiences and researches clearly state that teacher self-efficacy has significant positive influence on students.

Conclusion and recommendations

The hypotheses of the present study were found factual, and showed that there is a significant positive relationship between the teacher self-efficacy (students' engagement and instructional strategies) and the students' academic achievement. It has also been observed that the teachers are very efficacious and their level of self-efficacy is high which brings positivity in students' behavior, attitude and most importantly in their academic achievement. Those teachers who have a high level of self-efficacy produce better results regarding students' academic achievements.

A large number of studies indicate the influence of teacher self-efficacy beliefs on academic achievement, performance and success of the students in their educational results (Moore & Esselman 1992, 1994; Muijs & Reynolds 2001; Ross 1992, 1998). An overwhelming majority of the teachers with high self-efficacy convictions are more likely than the teachers with a low sense of self-efficacy beliefs to dominate and provide sound pedagogy for students and to arrange more effective, impressive, creative and interesting courses and curriculum in the classrooms. This encourages teachers to experiment various teaching techniques rather than confining to the same traditional methods of teaching (Guskey 1988) and to provide students with special and interesting learning needs (Allinder, 1994; Jordan, Krcaali Iftar & Diamond 1993). This also helps them to manipulate and figure out the solutions of the problems in the classroom (Chacon 2005; Korevaar, 1990) and to make the students busy with the academic work (Podell & Soodak 1993).

The study can be conducted on a larger sample size by

including the teachers and students of Zarghoon Town as well. Due to the limitation of resources and time, the study could not be broadened in all the parts of Quetta city. By including all classes of middle and secondary sections and both the public and private schools would make the study more interesting and promising. A provincial level study on the same topic may reveal interesting results. Training programs for the teachers should be designed to improve their level of self-efficacy in order to transmit the skills to the students.

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