

Effect of Teachers' Self-Efficacy on Students' Academic Achievements: Case of Male Public Sector Secondary Schools

Mehboob Ul Hassan*

Rafaqat Ali Akbar**

Abstract

Teachers have a strong professional commitment towards students' educational success. They exert their maximum potential and enthusiastically impart instructions to inspire students for better educational achievements. Teachers' cognitive attribute—self-efficacy—acts as a catalyst for students' better academic achievements in this regard. Current study was designed to measure the effect of teachers' self-efficacy on academic achievement scores of male public sector secondary school students enrolled in rural and urban areas of District Kasur. Study was quantitative in nature and researchers applied ex-post-facto research design. Sample of the study consisted of conveniently selected 1000 respondents; 200 teachers and 800 students. Data from teachers was collected by using Teachers Self-Efficacy Scale constructed by Tschannen-Moran and Hoy (2001). Students' Academic Achievement Scores (SAAS) were obtained from Board of Intermediate and Secondary Education Lahore after ensuring students' enrollment during data collection. Reliability of instrument was confirmed in SPSS by calculating Cronbach's Alpha score; .825. Collected data was analyzed by applying regressions analysis techniques. Findings show an overall 67 % teachers' self-efficacy effect on students' academic achievements, including 58 % effect on students' engagement, 65 % effect on instructional strategies and 60 % effect on classroom management for the sake of students' better achievements. Study recommends that Government authorities should substantiate pre-service and in-service teachers' efficacious beliefs before joining teaching profession.

Keywords: Teachers' self-efficacy scale, students' engagement, instructional strategies, classroom management, academic achievements.

Introduction

Current research is based on social learning theory put forward by Albert Bandura in 1950s which later progressed into social cognitive theory (Levin, Culkin & Perrotto, 2001; Ashford & LeCroy, 2010). Emphasis of theory entirely revolves round humans' personal, behavioral, cognitive and environmental aspects; hub of humans' entire life, that have strong interaction to verify one's willpower towards inspiration and his/her performance (Crothers, Hughes & Morine, 2008) and are embodied in triadic reciprocal

* PhD Scholar, Institute of Education and Research, University of the Punjab, Lahore.
Email: hassanbhattig@hotmail.com

** Director, Institute of Education and Research, University of the Punjab, Lahore.

determinism model (Wood & Bandura, 1989). Primarily, focus of social cognitive theory revolves around deep-seated aspects regarding self-observation, self-evaluation, self-reaction and self-efficacy (Redmond, 2010; Zimmerman, 2008). *Self-observation* refers to judge individual's achievements towards accomplishment of goals in extension of his/her inspiration for the sake of behavioral modification, *self-evaluation* entirely compares one's present functioning with required targets that significantly affects standardized essential objective, *self-reaction* considered as constructive/destructive responses to individual's functioning towards arousing achievements, and *self-efficacy* depends on individuals' strong belief and confidence towards successful task accomplishment (Bandura, 2000; Bandura; Tschannen-Moran & Hoy, 2001; Zimmerman & Schunk, 2001; Locke & Latham, 2002; Zimmerman, 2008).

Empirically literature claims that self-efficacy refers to backbone of person's inspiration (Bandura, 2001), individuals' confidence on hidden potential (Van der Bijl & Shortridge-Baggett, 2002), humans' opinions regarding their talent to carry out particular assignments (Axtell & Parker, 2003), one's trust to complete a challenging task applying his/her skills (Pajares, 2002), and task-oriented description of individual's self-worth (Lunenburg, 2011). Essential code of self-efficacy states that more efficacious people remain engaged in diverse activities to accomplish certain tasks (Van der Bijl & Shortridge-Baggett, 2002). Self-efficacy significantly affects individual's capabilities, inspirations and working towards goal achievement by applying capacities based on their confidence, potential and abilities (Pajares & Graham, 1999; Bandura, 2001; Tschannen, Moran & Hoy, 2001; Zimmerman, 2008; Lunenburg, 2011).

Teachers' self-efficacy refers to teachers' domain specific beliefs on their competencies, especially towards educational constructs used while imparting instructions (Putwain, Sander & Larkin, 2013). Teachers' efficacy is important construct that provides immediate influential response to respondents. During teaching, efficacious teachers provide plethora of information to students for the sake of better educational outcomes (Marzano, 2007; Marzano, Pickering & Pollock, 2001). Teachers possessing high self-efficacy apply innovative teaching techniques. They are extra responsible towards students' social growth, enthusiastic for students' education and bestow superfluous support to dull and pathetic students (Ross, Hogaboam-Gray & Hannay, 2001). High efficacious teachers have expectations from their pupils to accept responsibility of success in educational achievements (Allington, 2002). They have strong confidence that students' academic achievements are multiplied by means of learning and mutual help (Deemer, 2004; Alrefaei, 2015; Clay-Poster, 2015).

Teachers' efficacy can be measured by means of students' engagement, instructional strategies and classroom management (Tschannen-Moran & Hoy, 2001). Students' engagement is important contributor toward students' educational success

(Stronge, 2007). Efficacious teachers engage students by applying diversity of techniques; randomly call students, offer essential explanation and justification and optimistically engage students in group work and classroom while imparting instructions. They circumvent discrepancies that exert worse effects on students' social and education performance (Rodkin, Farmer, Pearl & Van Acker, 2000; White, 2009). Instructional strategies are teachers' way of imparting instructions in classroom during teaching-learning process for the sake of students' better educational outcomes (Tschannen-Moran & Hoy, Zimmerman, 2008). Literature indicated that efficacious teachers work out and transform instructional strategies to meet students' academic requirements, remain extra committed towards their professional responsibilities and have the potential to generate fruitful teaching-learning atmosphere for students' inspiration (Tucker, Porter, Reinke, Herman, Ivery, Mack & Jackson, 2005; Yeo, Ang, Chong, Huan & Quek, 2008; Alvarez-Nunez, 2012). Efficacious teachers' classroom management strategies are worth seeing based on their managerial qualities. They believe that students' educational success is entirely based on disciplined classroom situations (Tschannen-Moran & Hoy, 2001; Zimmerman, 2008). Efficacious teachers are more confident towards classroom responsibilities inculcating an interest among students towards learning (Allington, 2002; Deemer, 2004). Literature showed that teachers' self-efficacy is a considerable contributing factor that significantly influences the SAAS (Tournaki & Podell, 2005; Klassen & Chiu, 2010; Adu, Tadu & Eze, 2012; Ahmad, Hussain & Azeem, 2012; Tai, Hu, Wang & Chen, 2012; Rodríguez, Regueiro, Blas, Valle, Piñeiro & Cerezo, 2014; Alrefaei, 2015; Clay-Poster, 2015).

Tournaki and Podell, (2005) tried their best to gauge teachers' self-efficacy in favor of students' predicted academic achievement on randomly selected sample of 384 teachers from New York Metropolitan area. Researchers administered Gibson and Demo, (1984) scale consisted of 30 items mode of six point Likert type options. Data were analyzed by applying parametric techniques in SPSS. Findings show that teachers' self-efficacy has significant effect on girls' academic achievements, reading achievements and more positive effects on students' attentiveness. Findings further show that SAAS was good predictor for high self-efficacious teachers as compared to low self-efficacious teachers.

Ahmad, Hussain and Azeem, (2012) examined the influence of teachers' self-efficacy with students' self-regulated learning, school identification, test anxiety and SAAS in District Lahore of Punjab province. Findings confirmed strong correlation between teachers' self-efficacy and students' self-regulatory learning, moderate correlation between teachers' self-efficacy and school identification, weak correlation between teachers' self-efficacy and students' test anxiety, and strong relationship between teachers' self-efficacy and SAAS.

Students' achievements in public sector educational institutions are declining (Adu, Tadu & Eze, 2012). Social scientists' work brings fruitful results while teachers' attributes; self-efficacy, is the main construct that affects students' educational achievements (Bandura, 2001; Tschannen-Moran & Hoy, 2001; Zimmerman, 2008). Focusing on the worth of self-efficacy, researchers are eager to measure the effect of teachers' self-efficacy on SAAS. Ultimate aim of this study was to measure the effect of teachers' self-efficacy in terms of students' engagement, instructional strategies, and classroom management strategies based on Tschannen-Moran and Hoy (2001) scale.

Research Methodology

Current study was framed to explore the effect of teachers' self-efficacy on secondary schools' students' academic achievement scores. Study was quantitative in nature and researchers adopted *ex-post-facto* research design. Sample of the study consisted of 1000 respondents; 200 teachers and 800 students conveniently selected from rural and urban public sector secondary schools. Data from teachers were collected through administering long form of Tschannen-Moran and Hoy (2001) *Teachers Self-Efficacy Scale*; TSES. Scale is categorized in three subscales: teachers' efficacy in; students' engagement, consisted of 8 items, instructional strategies, having 8 items, and classroom management comprising 8 items mode of five point Likert type options. Instrument is globally administered to measure teachers' perceived abilities used in classroom during teaching learning process (Tschannen-Mora & Hoy, 2001; White, 2009; Zimmerman, 2008). Validated versions of TSES have already been used in other studies (White, 2009; Shaukat & Iqbal, 2012; Alrefaei, 2015; Odanga, Raburu & Aloka, 2015; Shahzad & Naureen, 2017). Factor wise reliability of the instrument was censured by calculating Cronbach's alpha scores; .861, .816 and .799. SAAS were obtained from concerned board of intermediate and secondary education after assuring students' enrollment from teachers during data collection. Data was collected by researchers ensuring ethical considerations.

Data Analysis and Interpretation

Data was analyzed in SPSS applying linear and multiple regression analysis techniques to measure the effect of teachers' self-efficacy on SAAS. There was no auto-correlation in data. Authenticity of data was confirmed by applying Durbin-Watson test, value ranged between 0-4 (Montgomery, Peck & Vining, 2001; Cronk, 2012).

Table 1 *Effect of teachers' self-efficacy on students' academic achievement scores*

No	Variables	B	SE	B	t	p
1	SAAS	26.898	15.375		1.749	.082
	TSE	1.667	.083	.817	20.018	.000

Note: $R=.817^a$, $R^2=.668$; $F(1,199)=400.712$, $p<.000^a$

Table 1 reflects that simple linear regression was applied to measure the effect of teachers' self-efficacy on students' academic achievements. Output claims construction of significant equation ($F(1,199)=400.712, p<.01$) comprising .668 value of R^2 with 66.80 % explained that increased variance were seen with standardized regression coefficient ($\beta=.817$). Extending results of regression coefficient, interpretation of independent sample t-test report that teachers' self-efficacy was significant predictor on SAAS, $t(198)=20.018, p<.01$. Secondary school students' predicted academic achievements were equal to $26.898+1.667$ scores where teachers' self-efficacy was measured in terms of their teaching confidence used in classroom. It is concluded that students' academic achievement were raised by 1.667 scores due to teachers' self-efficacy in classroom during teaching learning process.

Table 2 *Effect of teachers' self-efficacy in terms of students' engagement, instructional strategies and classroom management on students' academic achievement scores*

No	Variables	F	R	R ²	B	SE	β	t	p
1	Constant; SAAS				34.783	17.420		1.997	.047
2	Students' engagement	276.680	.763 ^a	.582	1.199	.591	.186	2.028	.044
3	Instructional strategies	371.810	.807 ^a	.651	2.311	.666	.425	3.470	.001
4	Classroom management	302.165	.776 ^a	.603	1.381	.561	.238	2.463	.015

Note: $R=.782, R^2=.612, \beta=.283; F(3, 197)=316.885, p<.000^a$

Table 2 reflects that multiple regression analysis technique was applied showing formation of significant equation ($F(3,197)=316.885, p<.01$) containing value of $R^2 .612$ with 61.20 % increased variance were seen with standardized regression coefficient ($\beta=.283$). Results further report construction of significant equation in favor of students' engagement, ($F(3, 197)=276.680, p<.01$ having .582 value of R^2 with 58.20 % explained variations were seen with standardized regression coefficient ($\beta=.186$), instructional strategies ($F(3,197)=371.810, p<.01$ possessing .651 value of R^2 with 65.10 % increased variance were observed with standardized regression coefficient ($\beta=.425$) and classroom management ($F(3,197)=302.165, p<.01$ having .603 value of R^2 showing 60.30 % increased variations were seen with construction of standardized regression equation ($\beta=.238$). Extending results of standardized regression coefficient, output of independent sample t-test claims that teachers' self-efficacy in account of students' engagement, $t(198)=2.028, p<.05$, instructional strategies, $t(198)=3.470, p<.05$ and classroom management, $t(198)=2.463, p<.05$ was significant predictor on students' academic achievement scores. Secondary schools' students' predicted academic achievements were equal to $34.783+1.199+2.311+1.381$ scores where teachers' self-efficacy in terms of students' engagement, instructional strategies and classroom management was measured

by their teaching potential used in classroom. It is concluded that students' academic achievement scores were raised by 4.891 scores due to the application of teachers' self-efficacy in extension of students' engagement, instructional strategies and classroom management during classroom teaching.

Discussion

School is a subculture of any society. It has a distinctive small educational diversity which affects teachers and students; pillars of teaching and learning process. Teachers have great intentions and are motivated towards students' success. Teachers deal students while having different class size, students' nature like fairness/unfairness, honest/dishonest, regular/absconder; intelligent/dull, and active/tedious. These are key constructs that directly affect teachers' cognitive abilities. Teachers' have the potential and strong confidence to manage students' abilities and inspire them towards behavioral, social and academic success (Bandura, 2001, Tschannen-Moran & Hoy, 2001; Skaalvik & Skaalvik, 2004; Chacon, 2005; Tournaki & Podell, 2005; Wolters & Daughtery, 2007; Alrefaei, 2015; Clay-Sposter, 2015).

Teachers' self-efficacy has remained a contributing factor towards students' success since last decades. Plethora of literature reported worth of teachers' self-efficacy towards students' academic achievement scores (Pajares & Graham, 1999; Caprara, Barbaranelli, Steca & Malone, 2006; Tai, Hu, Wang & Chen, 2012; Rodríguez, Regueiro, Blas, Valle, Piñeiro & Cerezo, 2014). A study was conducted by Tai, Hu, Wang and Chen, (2012) on randomly selected 372 teachers and students of Krejie and Morgan districts of Taiwan. Survey was conducted to collect data from respondents consisted of seven point Likert type responses. Researchers calculated chi square, t-test and multiple co-relations in SPSS. Findings showed that teachers' self-efficacy had significant effect on learning satisfaction, students' learning outcomes, and learning satisfaction. Teachers' teaching process also significantly affects students' academic achievements, learning satisfaction, and academic achievements scores. Findings of present study show that teachers' self-efficacy effects SAAS by 69 %.

Mojavezi and Tamiz (2012) conducted a study by measuring the effect of teachers' self-efficacy on students' motivation and students' academic achievement scores on randomly selected sample of 80 respondents in different cities of Iran. Study was quantitative in nature. Researchers used Tschannen-Moran and Hoy (2001) TSES scale and self-constructed students' motivated questionnaire to collect data from respondents. Reliability of the instruments was ensured by calculating Cronbach's alpha score; .76 and .85 respectively. Results claim small significant positive relationship between teachers' self-efficacy and students' motivation and depict significant difference between teachers' self-efficacy and SAAS. Findings of current study support the results of other studies

(Mojavezi & Tamiz, 2012; Rodríguez, Regueiro, Blas, Valle, Piñeiro & Cerezo, 2014; Alrefaei, 2015; Clay-Spooster, 2015).

Study of same nature was conducted by Shahzad and Noureen (2017) to explore the influence of teachers' self-efficacy on SAAS on sample of 160 respondents; 60 teachers and 100 students in Quetta, Pakistan. Data was collected by administering Tschannen-Moran and Hoy (2001) *Teachers Self-Efficacy Scale*. Students' academic achievement scores were obtained by self-constructed English Achievement Test. Reliability was ensured by calculating Cronbach's alpha scores; .94 and .89 respectively. Data was analyzed in SPSS by applying Pearson Product Moment Correlation (r) and multiple regression analysis. Findings report small significant correlation between teachers' self-efficacy and SAAS, significant small positive relationship between teachers' self-efficacy in terms of: students' engagement and students' academic achievement scores and instructional strategies and students' academic achievement scores. Results of current study support the findings of study conducted by Shahzad and Noureen (2007). Present study also confirms that teachers' self-efficacy significantly affects SAAS in terms of of students' engagement, instructional strategies and classroom management.

Study of same nature was conducted by Sariçoban and Bheejo (2016) to gauge the influence of self-efficacy on prospective teachers' foreign language academic achievement scores on sample of 100 male and female respondents in Ankara University of Turkey. Data was collected by administering standardized *Academic Self-efficacy Scale* from respondents. Scale consisted of 33 Likert type options. Reliability of the instrument was confirmed by calculating Cronbach's Alpha score; .827. Students' academic achievement scores were obtained from last semester based on respondents' CGPA. Data was analyzed in SPSS calculating Pearson Product Moment Correlation (r). Results show significant large positive relationship between male students' academic self-efficacy and academic achievement score, female students' academic self-efficacy and SAAS and also found strong positive relationship between self-efficacy and SAAS. Findings of present study support the results of other studies (Sariçoban & Bheejo, 2016).

Conclusion

Teachers are the builders of societies and nations. They give surplus of information for the sake of students' constructive educational considerations. Teachers use their perceived abilities for effective teaching learning process that unswervingly improve students' achievements. Current study was framed to measure the effect of Bandura's social cognitive theory; self-efficacy on students' academic achievement scores. Teachers' self-efficacy has remained measureable construct and good predictor of students' academic achievement scores since last decades (Pajares & Graham, 1999; Bandura, 2000; Tschannen-Moran & Hoy, 2001; Zimmerman, 2008; Rodríguez, Regueiro, Blas, Valle, Piñeiro & Cerezo, 2014; Alrefaei, 2015; Clay-Spooster, 2015). Study was quantitative in

extension of *ex-post-facto* research design. Researchers were eager to explore the effect of teachers' self-efficacy in terms of students' engagement, instructional strategies and classroom management strategies. Sample of the study consisted of conveniently selected 1000 respondents; 200 secondary school teachers and 800 students enrolled in public sector educational institutions of Punjab.

Data was collected by administering Tschannen-Morann and Hoy (2001) scale based on 24 items to gauge students' perceived abilities. Data was analyzed in SPSS by applying linear and multiple regression techniques. Study concludes that secondary schools' teachers; working in public sector secondary schools of Punjab province, had self-efficacy 67 % effect on SAAS with significant regression equation. Teachers impart their entire potentials to students for their educational and social development. Present study further concludes that teachers are confident on their abilities and 58 % maximize their potential in terms of students' engagement with significant equation. Secondary schools' teachers impart instructions applying different instructions to students managing diversity of classroom management strategies for the sake of SAAS. These instructions and management strategies direct students towards constructive learning strengthening students' understanding and increasing their thirst towards knowledge. Secondary school teachers use innovative and traditional management strategies to indulge students in educational activities. They also maximize their teaching and learning experience in this regard. Teachers face students' psychological unconstructive dilemmas; stress, anxiety, weakness, headache and pains that put negative effects on their self-assured performance. Facing diversity of students' psychological problems, teachers instruct students using different instructional strategies. Current study confirms that 65 % teachers' self-efficacy in favor of instructional strategies affects SAAS with significant regression equation. Teachers put their 60 % potential for classroom management on SAAS. Overall study concludes that teachers' self-efficacy is key indicator that is significantly affecting students' educational achievements enrolled in rural and urban secondary schools of Punjab province.

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