

Assessing the Impact of Teachers' Efficacy on Students Achievement

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ABSTRACT

This study at hand aimed at assessing the effect of teachers' efficacy on students' performance. The study having Descriptive design examine three facts of the teacher's efficacy: Instructional Strategies, Student's Engagement and Classroom Management with a view to determine whether these facets effect the achievement level of students as dependent variable. Teachers sense of efficacy scale (TSES), developed by Tschannen-Moren & Hoy (2001) and students' Academic Achievements scale developed by Uguroglu, Schiller and Walberg (1981) were used for the collection of data from Teachers and Students in Mathematics and English of 10th class at secondary level in District Peshawar.

INTRODUCTION

Teachers' Efficacy and Students' Academic Achievements

Berman et al. (1977) have defined Teachers Efficacy as "the degree to which the teacher firmly believes in his abilities to positively shape students' performance and motivation. Guskey & Passaro, (1994) holds the teachers' efficacy affects the students learning positively regardless of the fact whether the students are brilliant students or those motivated or troublesome. Tournaki & Podell, (2005) postulate that teachers' beliefs and attitudes improve learner's academic achievement motivation. Parsley & Corcoran, (2003) suggest to the policy makers and researchers to encourage teachers to assume responsibility by examining different means that influence the students' learning.

According to Stronge, (2007) there are various aspects that effect achievement of students among them. Teachers efficacy highly affect the student's involvement in Teaching learning Process. Guo, Justice, Sawyer, & Tompkins (2011) explained that the most important predictor of student academic achievement was teachers' efficacy. According to Uzun, Ozkilib, & Senturk (2010), teachers' efficacy and students' academic achievements have positive relationship. The study of Caprara, Barbaranelli, Steca, & Malone (2006) postulated that students' academic performance was greatly influenced by teachers' efficacy.

It was Rotter's (1977) social learning theory which for the first time brought up the concept of self-efficacy among teachers and its importance as a contributor for achieving certain outcomes in their students. His social learning theory indicated differentiates between internal versus external beliefs. By internal control teacher has been defined as the ones who believe he is capable enough to deal with challenging and unmotivated students whereas external control refers to teacher's belief that the outside class environment has more impact on student learning than their own teaching. Another

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important Social Learning Theory by Bandura's (1977) contributed much in the area under study; he theorized and developed thirty-items scale with seven sub-scales including efficacy to influence decision making, school resources, instructions, discipline, parental involvement and creating a responsive school climate. With the passage of time and continued researches carried out for a quarter of century on Teachers Efficacy some new instruments measuring teacher's efficiency have been emerged.

As a result of the work of a quarter of century on teaching efficacy, some new measures of teacher efficacy have emerged (Henson, Bernett, Sienty, & Chernnbers, 2000; Tchennen-Moran et al, 1998, 2001). Tschennen-Moran et all (1998) specifically defined teacher sense of efficacy as "capabilities to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p.233). Tchannan-Moran and Woolfolk-Hoy (2001) developed scale to measure teacher efficacy generally referred to as "Teacher Sense of Efficacy Scale" (TSES); this scale has been used and validated in a number of researches such as (Tschannen-Moran & Woolfolk Hoy, 2001; Fives & Buehl, 2010), Turkish (Çapa, Çakıroğlu & Sarıkaya, 2005), Greek (Tsigilis, Grammatikopoulos, & Koustelios, 2007), Europe (Klassen et al., 2009), Singapore (Klassen et al., 2009; Nie, Lau, & Liau, 2012), Arabic (Abu-Tineh et al., 2011), French (De Stercke, Temperman, De Lièvre, & Lacocque, 2014) China, Korea, Japan (Ruan et al., 2015) and Pakistan (Zai, 2016).

This study has adopted Tchannan-Moran and Woolfolk-Hoy's (2001) scale "Teacher Sense of Efficacy Scale" (TSES); two major reasons for motivation of the use of this scale are: first, this scale is widely used instrument of teacher efficacy; and second, it is also validated in Pakistani culture by Zai, S. A. Y. (2016).

Objectives of the Study

The main objective of this study was to determine whether teacher's efficacy affects the students' performance. This study uses the well referred Teacher Sense of Efficacy Scale (TSES), developed by Tschannen-Moran & Hoy (2001); TSES includes three subscales for the three dimensions of Teachers' Efficacy, namely Efficacy to Student Engagement, Efficacy to Instructional Strategies and Efficacy to Classroom Management towards student achievements. For Students' Academic Achievements, the scale provided for the purpose in the Multidimensional Motivational Instrument (MMI), developed by Ugurolglu, Schiller and Walberg (1981), is adopted. More specifically, the following hypothesis is set to be statistically tested for this study.

Hypothesis

Both teachers and students agree that the three components of Teacher Efficacy (Instructional Strategies, Student Engagement and Classroom Management) positively contribute towards Students' Academic Achievements.

RESEARCH METHODOLOGY

Research Design

The design of the study was Descriptive employing correlational approach of teachers' efficacy: Efficacy of Engagement (ESE), Efficacy of Instructional Strategies (EIS) and Efficacy of Classroom Management (ECM) were the independent variables whereas students' Academic Achievement was dependent variable. Teachers sense of efficacy scale (TSES) developed by Tschannen-Moran & Hoy (2001) and students' Academic Achievement (SAA) developed by Schiller and Walberg (1981) were adopted as research instruments.

The stated scales/subscales have been adapted to collect data on the three dimension of Teachers Efficacy (ESE, EIS and ECM) and Students' Academic Achievements (SAA), from both teachers and students. Teachers and students' perceptions have been modelled together in one and the same econometric model, while incorporating the differences of the two types of respondents through differential intercept and differential slope dummies.

Population and Sample

All teachers and students of the two disciplines, English and Mathematics, of public and private sector secondary schools comprise the population of this study. A total of 150 teachers and 150 students were randomly selected, from whom 98 teachers and 112 students returned the self-administered questionnaires. Hence, sample of this study includes 98 teachers and 112 students, resulting in 210 respondents, in total.

Analysis

In order to evaluate whether or not the three components of teachers' efficacy [(Instructional Strategies (EIS), Student Engagement (ESE) and Classroom Management (ECM)] affect Students' Academic Achievements (SAA), the latter variable is regressed over the former three components of teachers' efficacy, through the application of the following estimated econometrics model. Since data on all four variables have been obtained from both teachers and students, the model incorporates the difference of opinion of the two types of respondents through inclusion of both differential intercept ($D = 1$ for teacher and $D = 0$ for students) and differential slope ($ESE \times D = ESED$, $EIS \times D = EISD$ and $ECM \times D = ECMD$) dummies (following Gujarati 2007, pp. 304-343).

SAA = 1.703 - 0.990D + 0.225ESE + 0.131EIS + 0.300ECM - 0.343ESED					
(5.174)	(-2.333)	(2.338)	(1.410)	(2.880)	(-2.355)
(0.000)	(0.0210)	(0.020)	(0.160)	(0.004)	(0.0190)
				+ 0.128EISD + 0.403ECMD	
				(0.826)	(2.510)
				(0.410)	(0.013)
<hr/>					
R = 0.777			R ² = 0.603		R ² _{adjusted} = 0.590
F = 43.886 (p-value = 0.000)				N = 210	

(Figures in the first and second parentheses are t-statistic and p-values, respectively)

The estimation of Model 1 as a whole gives a good fit to the data (F-statistic is significant at $p < 0.01$). R^2 indicates that around 60 percent variation in dependent variable has been explained by the variations in explanatory variables. With the exception of one explanatory variable, namely Instructional Strategies (EIS) and its related differential slope dummy (EISD), all other explanatory variables are statistically significant at $p < 0.05$.

In addition to the fact that the estimated model fulfils the important conditions of major diagnostic/statistics tools (F-statistic, R^2 and t-statistics or its p-value), almost all explanatory variables included carry positive and expected signs. Hence, the empirical results of the estimated model are acceptable, and are expected to yield valuable insights and considerable discussions.

DISCUSSION AND RECOMMENDATIONS

Discussions

- The differential intercept dummy (D) has appeared to be statistically significant at $p < 0.05$, indicating that the two types of respondents, teachers and students, give different weights to their respective opinions regarding contribution of teachers' efficacy towards.
- The two slope dummies relating to the two variables, Student Engagement (ESE) and Classroom Management (ECM) found positively and statistically contributing, are statistically significant, indicating that the two types of respondents, teachers and students, though differ on the weight they assign, they agree upon the significant contribution of these two variables towards students' academic achievements.
- Interestingly, both types of respondents, teachers and students, seem to agree that the third component of teachers' efficacy, Instructional Strategies (EIS) does not work (variable is statistically insignificant), they also do not differ in granting weight to their respective decisions (relevant slope differential dummy is statistically insignificant).
- Thus, results suggest that respondents agree that, in the area of survey, teachers of English and Mathematics disciplines of secondary schools put emphasis on only two components of teachers' efficacy, namely Student Engagement (ESE) and Classroom Management (ECM), but they do

not follow proper Instructional Strategies (EIS) as per theory embedded in the Teacher Sense of Efficacy Scale (TSES) developed by Tschannen-Moran & Hoy (2001).

Recommendations

- First, of the three dimensions of teachers' efficacy, namely Student Engagement, Classroom Management and Instructional Strategies, the last dimension (Instructional Strategies) did not find contributing towards determination of students' academic achievements in the area of survey; the relevant stakeholders need to take note of problems and take appropriate remedial measures. This type of research may be used replicated in other areas for exploring the types of problems existence and respective solutions.
- Second, the model applied here seems to have an edge over the earlier similar regression models used with teacher-respondents only; this model provides an extension to the usual regression model for using two types of respondents – teachers and students – together; hence, this model should be given preference.

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