Teacher Self-Efficacy and Students' Achievement: A Theoretical Overview

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Abstract: The concept of teacher self-efficacy and its impact on the students' achievement has been a hot debate in the last 3 decades. The purpose of this study is twofold; the first purpose is to overview theoretical approaches to teacher self-efficacy. The second purpose is to examine studies investigated the relationship between teacher efficacy and student achievement. This study concluded with the latest hypotheses of the impact of teacher efficacy and students' performance.

Key words: Teacher self-efficacy, students' achievement, teacher efficacy measurements, studies investigated, hypotheses, Iran

INTRODUCTION

Classroom teacher has a very important role in the success or failure of each educational system. Teacher self-efficacy has been defined as the extent to which a teacher believes that s/he can influence students' behavior and achievement (Bandura, 1994). The results of many quantitative studies over the past 30 years indicated that students enrolled in some classrooms learn more than those enrolled in other classrooms and the explanation favored by most researchers for this difference is that some teachers are more effective than others (Miller *et al.*, 2008). Now, the important question which is not still clear in the literature is that what are the characteristics of an effective teacher?

An important factor that has proved to be powerfully related to many meaningful educational outcomes, such as teacher persistence, enthusiasm, commitment and instructional behavior as well as student outcomes such as achievement, motivation and self-efficacy belief has been teacher efficacy (Tschannen-Moran and Hoy, 2001). Further, talking about the significant role of school environment as an agency for cultivating students' cognitive self efficacy, Bandura (1997) maintained that the task of creating learning environment conducive to the development of cognitive skills, rests heavily on the talents and self efficacy of teachers.

Teachers who have a strong sense of efficacy about their capabilities can motivate their students and improve their cognitive development. However, those who have a low sense of efficacy favor a custodial orientation that relies heavily on negative sanctions to get students to study.

SELF-EFFICACY

The question of self have always intrigued and confused human beings from the beginning of time and the studies that have addressed this issue have been increased. According to Bandura (1999), the study of self processes have prevailed different domains of psychology because most external influences do not affect human functioning directly but through intermediary self processes. Further, he maintained that personal factors are very much involved in regulating intentional processes, schematic processing of experience, memory representation and reconstruction, cognitively based motivation, emotion activation, psychobiological functioning and the efficacy with which cognitive and behavioral competencies are executed in the transaction of everyday life.

Bandura (1994) has defined perceived self-efficacy as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Also, he believes that through four major processes which are cognitive, motivational and affective and selection one, self-efficacy determine how people feel, think, motivate themselves and behave. Also in 1999, he observed that efficacy belief form the foundation of human agency. Because if people do not believe that they can produce desired results by their actions, they will have little incentive to act or to persevere in the face of difficulties.

Further, Bandura (1994) believes that strong sense of efficacy influences people behavior in different ways. People with a strong sense of efficacy approach difficult tasks as challenges to be mastered rather than as threats

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to be avoided. This perspective improves their intrinsic interest and motivation in activities. They set themselves challenging and important goals and maintain strong commitment to them. They continue their efforts in the face of failure and quickly recover their sense of efficacy after failures or setbacks. They attribute failure to insufficient effort or deficient knowledge and skills which are acquirable and attainable. They approach threatening situations with assurance that they can exercise control over them. Such an efficacious perspective produces personal accomplishments, reduces stress and lowers tendency to depression. In contrast, people with low sense of efficacy evade from difficult tasks which they view as personal threats. They have low motivation and weak commitment to the goals, they choose to pursue. When faced with difficult tasks, they think of their personal deficiencies on the obstacles and predicaments that they will encounter rather than concentrate on how to perform successfully. They lesson their efforts and give up quickly in the face of difficulties. They are slow to recover their sense of efficacy after failure or setbacks. Also because, they view insufficient performance as deficient aptitude and ability it does not require much failure for them to lose faith in their capabilities.

SOURCES OF EFFICACY

According to Bandura (1994, 1999), self-efficacy beliefs are constructed from four main sources of information. The first way of creating a strong sense of efficacy is through mastery experience. It is the most authentic evidence of whether one has the capability to pave the way to obtaining success and the means of success. Therefore, the most effective way of coming up with a strong and promising enough sense of efficacy is through mastery experience. The previous successes achieved by the person build a robust belief in one's own efficacy while some experience of loss and failure undermine this belief, especially when this occurs before a sense of efficacy has taken a shape. If a person experience only easy successes he come to expect quick results and is easily discouraged by failure. So, a strong sense of self-efficacy requires experiences in overcoming obstacles through continuous and perseverant effort.

The second beneficial way of developing and strengthening the own efficacy beliefs is what Bandura; named it vicarious experiences. Seeing others perform a behavior with no adverse effects may lead us to believe in the own capability to do it, especially when these others are similar to ourselves, meaning that researchers too, possess the capabilities to master comparable activities. By the same token, observing other people failing to perform a certain course of actions successfully despite high effort demotivates us and lowers the perceptions of the own efficacy. The magnitude of influence of such a modeling experience highly depends upon perceived similarity to the models. The greater the assumed similarities, the more effective and persuasive are the models' successes and failures.

The third way of strengthening people's belief in their efficacy is social persuasion. People who are verbally persuaded that they have the required level of efficacy to master given activities are likely to make more attempts and sustain them. Whereas those who facing a problem are preoccupied with their deficiencies and accordingly harbor self-doubts are at a loss regarding what to do to solve it. While the first group's self-affirming beliefs facilitate the development of a sense of personal efficacy, the latter group's self-doubts about their capabilities make them avoid challenging activities that in turn can improve their potentialities and give up quickly in the face of difficulties. However, Bandura warned against the unrealistic persuasions and believed that they are quickly disconfirmed by disappointing results of one's efforts.

Also, people rely on their physical and emotional status to judge about their capabilities. So, they evaluate their tension, anxiety and depression as signs that may lead to poor performance. Mood can also affect a person's sense of efficacy. While positive mood enhance self-efficacy, negative mood diminish it. Further in activities that need strength and stamina, people consider fatigue, pains, etc., as signs of low physical efficacy.

EFFECTS OF SELF-EFFICACY

Bandura (1994, 1997, 1999), maintained that personal efficacy beliefs regulate human functioning through cognitive, motivational, emotional and choice processes. Based on Bandura's observations, this study tries to shed some light on how self-efficacy affects human performance in different respects.

As Bandura (1994) put it most courses of action are initially organized in thought. People's beliefs in their efficacy shape the types of anticipatory scenarios, they construct and rehearse. A success scenario evolves from an optimistic and positive view toward one's efficacy and in turn, leads to positive guides and supports for performance. Whereas, one who has developed a pessimistic, defeatist and skeptical view toward the result of his actions mostly visualizes failure scenarios and this cognitive condition serves as a stumbling block to his otherwise achievable goals and accomplishments. Further, how one has perceived his efficacy in dealing with different situations highly affects the quality of the

cognitive processing of information, low sense of efficacy adversely affects person's analytic thinking and performance while high self-efficacy paves the way for being more analytic and task-oriented.

Further, as Bandura (1999) put it most human motivation is cognitively generated and efficacy beliefs play a central role in the self regulation of motivation. He mentioned three types of cognitive motivators, namely; causal attributions, outcome expectancies and cognized goals around which different theories have been built. The corresponding theories to these three motivators are attribution theory, expectancy-value theory and goal theory, respectively.

People who are highly efficacious mostly attribute their failures to either inappropriate circumstances or their insufficient effort while those who harbor a low level of self-efficacy, most of the time, ascribe their failures to their low competence. These causal attributions influence people's motivation and performance mainly through personal efficacy beliefs.

In addition when people start to take action, their performance is directly controlled by the goals, they have set. The more challenging and explicit the goal, the more the motivation is enhanced and sustained. Also, it is partly on the basis of efficacy beliefs that people select which goal challenges to undertake how much efforts to invest and how long to persevere in the face of difficulties.

Furthermore, people's self-efficacy beliefs influence how much stress and depression and anxiety they experience in threatening and difficult situations. Bandura (1999) maintained that efficacy beliefs regulate emotional status by influencing how threats are cognitively perceived by supporting coping actions that alter the threats by exercising control over perturbing thought patterns and by alleviating aversive affective states. To elaborate, he mentioned that efficacy beliefs constitute a strongly predictive factor regarding how the resultant threats are perceived, approached and cognitively processed. People who believe that the difficulties and corners they face are insurmountable have the seemingly stable and unavoidable disposition to consider the situations facing them dangerous and consequently are almost always fed up with their own deficiencies. They tend to exaggerate the severity of possible threats and suffer from unconsciously awaiting and worrying about things that rarely happen. In contrast, people having high sense of self-efficacy enjoy an adequate degree of certainty about their power to exercise control over events befalling them. Their cognitive processing of potential threats make all mishaps to be regarded quite benign, though they are exposed to the same stressors considered

uncontrollable by the former group. Also, high efficacy beliefs change and manipulate the coping behaviors and by doing so regulate stress and anxiety arousal. The stronger the senses of efficacy, the more people dare to take action in challenging situations.

Since, people are partly the product of their environment, their self-efficacy beliefs can influence the types of activities and environments that they choose. Once people come to believe that they have the required capability for coping with the environments, they readily undertake challenging activities and situations which can cultivate their competencies, interests and social network that determine life courses while if they judge themselves incapable of dealing successfully with environments that is if they perceive these environments as exceeding their capabilities, they mostly avoid them. One example of the power of self-efficacy beliefs to affect the course of life path is career choice or development. The higher the level of people's perceived self-efficacy of the people, the wider range of career options they seriously consider, the greater their interest in them and the better they prepare themselves educationally for the occupational pursuits they choose and the greater is their success (Bandura, 1994).

TEACHER SELF-EFFICACY

The notion of self-efficacy holds important implications for the teaching profession. This notion has been defined as teacher's belief about his/her capabilities to bring about positive effects on students learning (Tschannen-Moran and Hoy, 2001). Teacher efficacy is comprised of two dimensions: Personal Teacher Efficacy (PTE) which refers to the teacher's belief that he/she can bring about positive effects on students' learning and General Teacher Efficacy (GTE) which refers to the teachers' belief that the teaching profession in general can bring about student change (Chacon, 2005). This notion has proved to be powerfully related to many meaningful educational outcomes, such as teacher persistence, enthusiasm, commitment and instructional behavior as well as student outcomes such as achievement, motivation and self-efficacy belief has been teacher efficacy (Tschannen-Moran and Hoy, 2001). Further, talking about the significant role of school environment as an agency for cultivating students' cognitive self-efficacy, Bandura (1994) maintained that the task of creating learning environment conducive to the development of cognitive skills, rests heavily on the talents and self-efficacy of teahers. Teachers who have a strong sense of efficacy about their capabilities can motivate their students and improve their cognitive

development. However, those who have a low sense of efficacy favor a custodial orientation that relies heavily on negative sanctions to get students to study.

Similarly, Somech and Drach-Zahavy (2000) argued that a teacher's sense of efficacy will determine the amount of effort he or she puts into teaching, the degree of persistence when confronted with difficulties and the task choices made. Generally speaking, according to Uden, people with strong self-efficacy belief tend to be more satisfied with their job, demonstrate more commitment and have lower absenteeism. Similarly, educators with strong self-efficacy belief tend to persist in failure situation, take more risk with the curriculum use new teaching approaches, get better gains in children's achievement and have more motivated students. Also, the results of some studies confirmed that, teacher efficacy is related to teacher burnout (Brouwers and Tomic, 2000; Fires *et al.*, 2007).

TEACHER EFFICACY MEASUREMENT

While the effects of teacher efficacy on teacher performance in the classroom and student achievement have been well documented, there have been lots of controversies and debates about how to measure this construct. According to Tschannen-Moran and Hoy (2001), there have been lots of efforts to capture and measure this elusive construct. According to Tschannen-Moran and Hoy (2001)'s study, this study presented a historical development of teacher efficacy scales briefly.

The idea of teacher self-efficacy was first examined by the RAND researchers. Based on Rotter's Locus of Control Theory, RAND researchers considered teacher efficacy as the degree to which teachers believed that they could control the reinforcement of their actions. In these studies, the construct of self-efficacy was measured using just two 5-point Likert scale items:

- When it comes right down to it a teacher really can not do much because most of a student's motivation and performance depends on his or her home environment
- If I try really hard, I can get through to even the most difficult and unmotivated students

The 1st item deals with General Teacher Efficacy (GTE) which refers to the teachers' belief that the teaching profession in general can bring about student change. And the 2nd item refers to Personal Teacher Efficacy (PTE) which refers to the teacher's belief that he/she can bring about positive effects on students' learning (Chacon, 2005).

Following the publication of the first RAND study, Guskey (1981) developed a 30 item instrument measuring responsibility for student achievement. For each item, participants were asked to distribute 100 percentage points between two alternatives, one stating that the event was caused by the teacher and the other stating that the event occurred because of factors outside the teacher's immediate control (Tschannen-Moran and Hoy, 2001).

At the same time that Gusky developed the RSA, Rose and Medway (1981) proposed a 28 item measure called the 'teacher locus of control'. The test takers were to assign responsibility for students' successes or failures by choosing between two competing explanations. These explanations are according to the mutually exclusive conceptualizations of internal and external locus of control defined in theoretical underpinnings (Tschannen-Moran and Hoy, 2001).

In another attempt, influenced by the social cognitive theory of Ashton *et al.* (1984) developed some vignettes in which certain situations were described as scenarios in order for the teacher to make judgments as to their efficacy in handling the situations on a 7-point scale from extremely ineffective to extremely effective. In addition to this self-referenced version, the researchers developed another version which was mainly norm-referenced. In this version, teachers compared themselves to other teachers. These vignettes were significantly correlated with the RAND items while this was not true about the former version.

Further based on the formulations of RAND studies and social cognitive theory of Bandura as well, Gibson and Dembo (1984) developed a long 22-item efficacy scale with a 6-point scale of rating. In this scale, factor analysis consistently showed two independent factors General Teaching Efficacy (TE) and Personal Teaching Efficacy (PE) but at times, the make up of the scales varies slightly. For example, it was often found that items 15 and 21 do not load on either factor and must be dropped (Tschannen-Moran and Hoy, 2001).

Arguing that teacher efficacy is not uniform across different ject matters, nor across the different types of tasks, Bandura (1997) developed the Bandura's teacher efficacy scale including 30 items with 7 sub-scales: instructional self-efficacy and disciplinary self-efficacy as the two maintaining the traditional classroom focus but the 5 new dimensions extending the scope of teacher efficacy construct to include efficacy to influence on decision making, to influence on school resources, to enlist parent involvement, to enlist community involvement and to create a positive school climate. The

answers are rated on a 9 point scale ranging from 1: Nothing through 5: Some influence to 9: A great deal (Tschannen-Moran and Hoy, 2001).

Finally, Tschannen-Moran and Hoy (2001) designed the teachers' sense of efficacy scale in which the factor analysis conducted determined 3 correlated factors: Efficacy in student engagement, efficacy in instructional practices and efficacy in classroom management. This scale is sometimes referred to as the Ohio State Teacher Efficacy Scale (OSTES), since it was developed at the Ohio State University.

TEACHER EFFICACY, TEACHER PERFORMANCE AND STUDENT ACHIEVEMENT

In this study, some of the studies which have investigated the relationship between the notions of self and teacher efficacy with different aspects of teaching and students' achievement have been briefly elaborated on.

Caprara *et al.* (2006) examined the relationship between teachers' self-efficacy beliefs, their job satisfaction and students' academic achievement. The participants were over 2000 teachers in 75 Italian junior high schools. They were administered self-report questionnaires to assess self-efficacy beliefs and their job satisfaction. Further, students' average final grades at the end of junior high school were collected in two subsequent scholastic years. The results of structural equation modeling analyses indicated that teachers' personal efficacy beliefs affected their job satisfaction and students' academic achievement.

Likewise, Ross (1992) investigated the relationship between student achievement, teacher efficacy an interaction with assigned coaches on a sample of 18 grade 7 and 8 history teachers in 36 classes. The result of the study indicated that students' achievement was higher in classrooms of teachers who had more contact with their coaches and in classrooms of teachers with greater confidence in the effectiveness of education.

In a longitudinal study of teacher burnout and perceived self-efficacy in classroom management, Brouwers and Tomic (2000) examined the direction and time-frame of relationships between perceived self-efficacy in classroom management and the three dimensions of burnout among 243 secondary school teachers. Their results indicated that perceived self-efficacy had a longitudinal effect on depersonalization and a synchronous effect on personal accomplishment. However, the direction was reversed for the relationship between perceived self-efficacy and emotional exhaustion. They concluded that perceived

self-efficacy in classroom management must be taken into account when devising interventions both to prevent and to treat burnout among secondary school teachers.

In another study, Somech and Drach-Zahavy (2000) found that self-efficacy was positively related to extra-role behavior toward the team and the organization. Extra role behaviors were defined as those behaviors that go beyond specified role requirements and are directed toward the individual, the group or the organization as a unit in order to promote organizational goals self-efficacy and general-efficacy were measured through an 11-item and a 10-item scale, respectively based on Riggs and Enochs (1990) and adopted for use with teachers. The example items dealing with personal and general teaching efficacy, respectively are; I have confidence in my ability to do my job and the teachers of this school have excellent job skills. The items were rated on a 5-point Likert scale ranging from strongly disagree to strongly agree. The internal consistencies were 0.71 for personal and 0.78 for general teaching efficacy scales. Positive and significant correlations were found between self-efficacy and extra-role behavior toward the team and toward the organization. Also, the results supported a positive relationship between collective efficacy and extra-role behavior toward the team.

Further, Ghith and Shabban (1999) investigated the relationship between perceptions of teaching concerns, teacher efficacy and selected teacher characteristics on 292 Lebanese teachers from diverse school backgrounds with a wide range of teaching experience. The results of their study indicated that experience and personal efficacy were negatively related to the perception of teaching concerns whereas gender, grade level taught and general efficacy were not related to the perception of any of the categories of teaching concerns. Further, the results revealed that beginning teachers and those with low sense of personal efficacy were concerned about the task of teaching and the impact they make as teachers more than their highly experienced and more personally efficacious counterparts.

In another study, Rose and Medway (1981) examined the mediating effects of teacher efficacy by comparing two models derived from Bandera's social-cognitive theory. Model A hypothesized that transformational leadership would contribute to teacher commitment to organizational values exclusively through collective teacher efficacy. Model B hypothesized that leadership would have direct effects on teacher commitment and indirect effects through teacher efficacy. He gathered data from 3,074 teachers in 218 elementary schools in a cross-validation sample design. The result of the study provided greater support for model B also the study

indicated that transformational leadership had an impact on the collective teacher efficacy of the school; teacher efficacy alone predicted teacher commitment to community partnerships and transformational leadership had direct and indirect effects on teacher commitment to school mission and commitment to professional learning community.

In another longitudinal study, Pinquart *et al.* (2003) investigated whether academic self-efficacy beliefs and grades in school at the ages of 12-15 would be associated with unemployment and job satisfaction at the age of 21. The results of their study revealed that individuals with high self-efficacy beliefs and better grades were less likely to become unemployed and more likely to be satisfied with their jobs. Further, the relationship between high self-efficacy and unemployment was mediated by higher career-related motivation and by less perceived application stress. Also, the relationship between self-efficacy and job satisfaction was primarily mediated by higher vocational congruence and less application stress. Based on these findings, the researchers conclude that school-based interventions aimed at increasing academic capabilities and self-efficacy would be helpful for adolescent's successful school-to-work transition.

In addition, Tournaki and Podell (2005) gathered data from 384 general education teachers in order to examine how the interaction between student and teacher characteristics affects teachers' predictions of students' academic and social success. The participants responded to one of 32 possible case studies describing a student in which gender reading achievement, social behavior and attentiveness were manipulated experimentally and to a 16-item teacher efficacy scale. Their findings indicated that teachers with high efficacy made less negative predictions about students and seemed to adjust their predictions when student characteristics changed while low efficacy teachers seemed to be paying attention to a single characteristic when making their predictions. Also, all teachers responded similarly to students who exhibited a combination of aggressive and inattentive behaviors that is if students were friendly, inattentiveness were tolerated more than if they were aggressive. Furthermore, all teachers made higher predictions of academic success for students reading on grade level even when they were aggressive than for students reading below grade level even when they were friendly.

Finally, Di Fabio *et al.* (2006) investigated the relations between teacher self-efficacy, social demographic variables (age, years of teaching and type of school) and level of job involvement, organizational commitment and organizational satisfaction. The participants were 328 Italian teachers of 20 high schools.

CONCLUSION

Based on the studies reviewed in this study, it is crystal clear that both personality and the notion of self-efficacy have been consistently found to be related to teacher behavior and student achievement. However, much of the past studies have tried to investigate the relationship between teacher efficacy and different aspects of teaching and student achievement and little attention has been given to the relationship between personality and teacher efficacy. The review of literature for this study did not revealed any study that examined the relationship between big five personality traits and English language teacher efficacy. So, there is a need to investigate the relationship between big five personality structure, teacher efficacy and student achievement.

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