Development of Self-Efficacy Scale of B. Ed. Student-Teachers

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Abstract:

The position of a student teacher is distinct from a regular student and a regular teacher. She/he has to fulfil his/her duties of being a student and as well as of being a teacher. Self-efficacy in the context of student teachers is judgment of his/her capabilities to bring about desired result of his/her own commitment and learning and as well as of his students during teaching practice. The researcher is intended to measure self-efficacy beliefs of student teachers. The objective cannot be achieved through any general self-efficacy scale and as per search of suitable self-efficacy scale has gone, no reported scale has been found which completely suits the functional areas of student teachers, which require a different set of self-efficacy beliefs. So it is required to create a separate test for the undertaken purpose i.e. self-efficacy beliefs in the area of student teaching.

Key words: student-teacher, self-efficacy, General Self-efficacy, Task specific self-efficacy

The destiny of a nation is shaped in the classrooms and teachers act as main pillars of a sound and progressive society. Quality of teachers is the most important and decisive factor influencing student outcomes in every aspect. Teacher education plays a key role in determining the quality of teachers. Teacher education refers to the policies and procedures designed to equip prospective teachers with the knowledge, attitudes, behaviours and skills they require to

perform their tasks effectively in the classroom, school and wider community. The purpose of teacher education is to produce efficient teachers as only efficient teachers can influence students and can also make the toughest subject interesting for them. A student-teacher is distinct from a regular teacher as she /he has to fulfil her/his duties of being a student and as well as of being a teacher.

Investigation by Deota (2012) revealed that B.Ed. students during their course face a variety of problems as to coping with the practice teaching, use of statistics, speaking English, meeting submission deadlines, lengthy syllabus, high work load, tension of future job. It can be said student-teachers have their own set of problems and environment.

Fundamentally, the student-teacher must consider oneself and behave as a beginning professional. He is expected to act professionally, working with the cooperating teacher, the university supervisor, professional colleagues, and students to strengthen their skills and knowledge as a teacher. How do they face challenges, direct their actions, and succeed? The answer to this question lies with the concept of self-efficacy.

"If I have the belief that I can do it, I shall surely acquire to do it even if I may not have it at the beginning."

~ Mahatama Gandhi

The above quote points towards the notion that the moment an individual starts believing that he can do a certain task, his chances of success start increasing. This notion is scientifically termed as self-efficacy. The thoughts of self-efficacy, i.e. believing in one's own capability, has great effect on human functioning. The concept of self-efficacy developed in Albert Bandura's studies of human social cognition theories, which has its roots in Miller and Dollard's (1941) theory of social learning and imitation. This theory of social learning provided the base for Bandura and Walters' (1963) write-up *Social Learning and Personality Development*, broadening the frontiers of social

learning theory with the now familiar principles of observational learning and vicarious reinforcement. In 1977, with the publication of "Self-efficacy: Toward a Unifying Theory of Behavioural Change", Bandura conceptualized the self-beliefs as self-efficacy. The fundamental assumption of Bandura's concept of self-efficacy is that people are self-organizing, proactive, self-reflecting and self-regulating rather than a reactive organism shaped and shepherded by environmental forces or driven by concealed inner impulses (Pajares 2002).

Bandura (1997) proposed that because self-efficacy beliefs were explicitly self-referent in nature and directed toward perceived abilities of given specific tasks, these were powerful predictors of behaviour. The research literature has supported this proposition. Research has linked efficacy to a variety of clinical issues such as phobias (Bandura 1983), addiction (Marlatt, Baer, & Quigley 1995), depression (Davis & Yates 1982), and smoking behaviour (Garcia, Schmitz, & Doerfler 1990). Educationally, self-efficacy beliefs are related to academic performance and self-regulated learning (Hackett 1995; Pajares 1996; Schunk 1991; Zimmerman 1995). Importantly, efficacy beliefs help dictate motivation (Maehr & Pintrich 1997; Pintrich & Schunk 1996). Bandura observed:

> People regulate their level and distribution of effort in accordance with the effects they expect their actions to have. As a result, their behavior is better predicted from their beliefs than from the actual consequences of their actions. (1986, 129).

From the social cognitive theory perspective, because human agency is mediated by our efficaciousness, self-efficacy beliefs influence our choices, our effort, our persistence when facing adversity, and our emotions (cf. Pajares 1997).

Bandura (1994) defined self-efficacy as:

> […] people's beliefs about their capabilities to produce designated levels of performance that exercise influence over

events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes." […] "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses.

According to Bandura (1977, 1986), the acquisition of high or low efficacy expectations have four major sources: performance accomplishments, vicarious experiences, verbal persuasion and states of physiological (emotional) arousal.

General Self-efficacy and Task specific self-efficacy

Scherbaum et al. (2006) states that General Self-efficacy (GSE) has been conceptualized as a relatively stable generalized belief that an individual can marshal the resources needed to deal with the challenges that he or she experiences. That is, GSE is a trait-like belief in one's competence and Task-specific self-efficacy is concerned with the judgement of one's own capabilities to perform a specific task. Task-specific self-efficacy is frequently researched in both organizational (e.g. job self-efficacy, occupational self-efficacy, group self-efficacy) and entrepreneurship (e.g. entrepreneurial self-efficacy) literature. It is evident from past researches that task-specific self-efficacy is a better predictor of task performance and behaviour than generalized self-efficacy (Scholz, Dona, Sud, & Schwarzer 2002). However, Bandura (1997) has argued that task-specific self-efficacy is more useful in predicting performance. Research by Scholz et al. (2002) supports this assertion, finding that task-specific self-efficacy is important for helping individuals rebound from specific failures and avoiding performance deficits in the future.

In the present research, task specific self-efficacy of student-teacher has been taken into consideration. It includes all possible tasks a student teacher performs during his course. On the lines of Bandura's definition of self-efficacy, student teacher self-efficacy can be defined as judgment of his/her capabilities to bring about desired result of his/her own commitment and learning and as well as of his students during teaching practice.

Significance of the study

Self-efficacy as well as teacher efficacy has emerged as a worthy variable in educational research and extensive research has been done to determine the factors and variables associated with self-efficacy. But few studies have been found for determining factors and variables associated with self-efficacy of student-teachers. Bandura (2006) stated that these beliefs cannot be measured with one all-purpose psychological test.

This generalized approach of assessing self-efficacy usually has limited explanatory and predictive value because most of the items in all-purpose test may have little or no relevance to the area of functioning. Moreover, in an effort to serve all-purpose, items in such a measure are usually designed in general terms detached from the situational demands and conditions. The results from such a scale are vague and tell very less about what exactly is being measured. The researcher is intended to measure self-efficacy beliefs of student teachers. The objective cannot be achieved through any general self-efficacy scale and as per search of suitable self-efficacy scale has gone, no reported scale has been found which completely suits the functional areas of student teachers, which require a different set of self-efficacy beliefs. So it is required to create a separate the test for the undertaken purpose i.e. self-efficacy beliefs in the area of student teaching.

Objectives

1) To construct task-specific self-efficacy scale of B.Ed. student teachers.
2) To find face validity of the task-specific self-efficacy scale of B.Ed. student teachers.
3) To find reliability coefficient of the task-specific self-efficacy scale of B.Ed. student teachers.

Sample

Two samples have been used in the present study. First sample is of 75 B.Ed. students of Amity Institute of Education, AUUP, Noida for try-out-1 of the first draft of the scale. Sample of 200 B.Ed. students of Guru Nanak College of Education for women, Kapurthala and Lord Krishna College of Education, Sultanpur Lodhi, Kapurthala was used for second try-out of the final draft of the scale to find reliability coefficient of the same.

Construction of Self-efficacy Scale for Student-teachers

In the present research, task specific self-efficacy of student-teacher is undertaken. It includes all possible tasks a student teacher performs during his course. On the lines of Bandura's definition of self-efficacy, student teacher self-efficacy can be defined as judgment of his/her capabilities to bring about desired result of his/her own commitment and learning and as well as of his students during teaching practice.

For the purpose of constructing statements related to student-teacher self-efficacy, on the bases of roles played by student-teacher i.e. being a teacher and being a student, two major areas are defined: A. Student related self-efficacy and B. Teacher related self-efficacy. Different self-efficacy scales and related literature were reviewed and, according to the guidelines provided by Albert Bandura for constructing self-

efficacy scale for teacher and children, 8 dimensions were added under sections A and B.

Section A. Student related self-efficacy

Bandura pioneered work in the measurement of children's self-efficacy via the establishment of scales to measure children's self-efficacy on several dimensions (Bandura et al. 1999). Utilizing his social cognitive theory as a model, he proposed 28 items related to five constructs of self-efficacy: academic achievement, learning, leisure and extracurricular activities, self-regulatory to resist pressure to engage in high-risk activities involving alcohol, drugs, and transgressed behaviour, and social relations. Later in 2006, Bandura gave the 8 dimension based children self-efficacy scale i.e. Self-Efficacy in Enlisting Social Resources, Academic Achievement, Self-Regulated Learning, Leisure Time Skills and Extracurricular Activities, Self-Regulatory Efficacy, Meet Others' Expectations, Social Self-Efficacy, Self-Assertive Efficacy, and Enlisting Parental and Community Support. Other scales on student self-efficacy are Elementary Student Self-Efficacy by Carl et al. (2009) in relation to functional domains: Student learning, peer relations and resisting drug use.

Taking these two scales as model and keeping specific tasks of student-teaching i.e. lesson planning, micro and macro teaching etc. in mind, the following dimensions are designed.

Dimension I: Identifying and usage of resources.
Dimension II: Understanding instructions in classroom.
Dimension III: Self- learning.
Dimension IV: Leisure-time management and co-curricular activities.
Dimension V: Self-assertion/Self-expression.
Dimension VI: Social self-efficacy.
Dimension VII: Meeting other's expectations.
Dimension VIII: Community support.

Section B: Teacher related self-efficacy

Based on social cognitive theory, teacher self-efficacy may be conceptualized as individual teachers' beliefs in their own ability to plan, organize, and carry out activities that are required to attain given educational goals. Tschannen-Moran and Woolfolk Hoy defined teacher efficacy as a teacher's "judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated."

Based on Bandura's definition of self-efficacy several instruments have been developed to measure (personal) teacher self-efficacy. In these scales items are associated to dimensions of job accomplishment, skill development on the job, social interaction with students, parents, and colleagues, and coping with job stress (Schwarzer, Schmitz, & Daytner 1999); instruction, adapting education to individual students' needs, motivating students, keeping discipline, cooperating with colleagues and parents, and coping with changes and challenges (Skaalvik and Skaalvik 2007); Influence Decision making, Influence School Resources, Instructional Self-Efficacy, Disciplinary Self-Efficacy, Enlist Parental Involvement, Enlist Community Involvement and Create a Positive School Climate (Bandura 2006).

Taking these scales as model and keeping functional domains of student teacher, the following dimensions are designed:

Dimension I: Classroom instruction self-efficacy.
Dimension II: Identifying and using resources.
Dimension III: Classroom management
Dimension IV: Community Involvement
Dimension V: Decision Making
Dimension VI: Guidance and Counselling
Dimension VII: Evaluation of students' performance.
Dimension VIII: Communication.

Under each dimension, possible statements were phrased following recommendations for item construction by Bandura (2006) for measuring student-teacher self-efficacy: (a) because self-efficacy is concerned with perceived capability the items should contain verbs like "can" or "be able to" in order to make clear that the items ask for mastery expectations because of personal competence, (b) the object in each statement should be "I" since the aim is to assess each teacher's subjective belief about his or her own capability, and (c) each item should contain a barrier. A total of 58 items were constructed. The item distribution is given below:

Section A: Student related self-efficacy	Section B: Teacher related self-efficay
Dimension I: Identifying and usage of resources 1,2,6,45	Dimension I: Class-room Instruction Self-efficacy 3,4,5,21,24,25
Dimension II: Understanding Instructions in Class-room 7,12,49	Dimension II: Identifying and usage of resources 26,29,31,33,46
Dimension III: Self-learning 8,9,10,11,18,48	Dimension III: Class-room Management 32,36,47,52
Dimension IV: Leisure time management and Co-curricular activities 13,22,27	Dimension IV: Community Involvement 34,38,39,54,56
Dimension V: self-assertion/self-expression 14,16,28, 36	Dimension V: Decision Making 55,57
Dimension VI: Social Self-efficacy 16,17,30,19	Dimension VI: Guidance and Counselling 37,40
Dimension VII: Meeting other's Expectations 23,50,51,53	Dimension VII: Evaluation of Student's Performance 41,42,43,44
Dimension VIII: Community Support 20	Dimension VIII: Communication 58

Try-Out 1

For first try-out an open end question was also added to the draft in order to check missed out dimension. A preliminary try-out of the draft was done on 75 available B.Ed. students of Amity Institute of education in order to check whether all the

dimensions are covered by the scale. Appropriate instructions were given to students and these were assisted when they had any sort of problem.

Results of try-out1

Total respondents (N)	75
Sum	15928
Average	212.3733
SD	22.9745
Variance	527.82765025
Skewness	-0.633683125
Kurtosis	-0.042147491

Table 2: General statistics on sample

Student-teachers have a conviction that they are gaining the necessary skills and self-efficacy through the teacher training program. They may have initially inflated level of self-efficacy.

Face validity of items of self-efficacy scale

For checking the face validity of modified self-efficacy scale, the preliminary draft of the scale was administered to faculty members of Amity Institute of Education, Amity University, Uttarpradesh and Department of Extension Education, Punjab Agricultural University, Punjab. A total of 11 number of Teachers' feedback were received and recommended modifications regarding addition/deletion and language of items has been made in the draft.

Implemented modifications

At the recommendations of experts and discussion with Guide the four point scale was converted into 10 point scale as per the guide lines provided by Bandura (2005). Also, at the recommendations of experts, items under dimension I of section A and Dimension II in section B; dimension V of section A and

Dimension VIII of section B; dimension VIII of section A and Dimension V of section B were merged together which reduced the number of items to 53, and addition of Extra dimension of stress management added 1 more items resulting in total 54 items for final draft of the scale for try-out 2 for finding reliability of the scale.

Reliability Coefficient of the Scale

Reliability refers to the consistency of a measure. A test is considered reliable if we get the same result repeatedly i.e. each time the test is administered to subjects, the results should be approximately the same. There are many different ways of estimating reliability of a scale. For this undertaken research, Split-half method has been employed. In split-half method, the test is first divided into two equivalent halves and correlation found for these half-tests. From the reliability of the half-test, self-correlation of the whole test is then estimated through the Spearman-Brown prophecy formula. The procedure in detail is to make up two sets of scores by combining alternate items in the test. The first set of score represents performance on the odd-numbered items and the second set of score, performance on the even-numbered items. From the self-correlation of the half-tests, the reliability coefficient for the whole test can estimated from the formula:

$$R11 = 2r1/2/ \ 1+r1/2$$

Where, R11= reliability of coefficient of the whole test and r1/2= correlation between two halves.

Try Out-2 for Reliability

For finding reliability of the scale the scale was administered on the sample 200 student-teachers of Guru Nanak College of Education for women, Kapurthala and Lord Krishna College of Education, Sultanpur Lodhi, Kapurthala. Split half method was employed. Self-correlation between two halves was estimated as r=0.486869253 and reliability coefficient of the whole test is

found to be 0.654913299. which is fair enough as per Nunnally and Bernstein (1994) provided guidance in the interpretation of the reliability coefficient by stating that a value of .70 is sufficient for early stages of research, but that basic research should require test scores to have a reliability coefficient of .80 or higher. When important decisions are to be made with test scores, a reliability coefficient of .90 is the minimum with .95 or higher a desirable standard.

Conclusion

Student-teachers have a conviction that they are gaining the necessary skills and self-efficacy through the teacher training program. They may have initially inflated the level of self-efficacy. All the items have faced validity and measures that are intended to measure the Reliability coefficient of the scale, which is found to be satisfactory at its primary stage. It can be concluded that scale is reliable enough to use in order to study self-efficacy beliefs of B.Ed. Student-teachers.

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