

CONSTRUCTION AND STANDARDIZATION OF SELF EFFICACY SCALE

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Abstract

This paper gives information about the development and standardization of self efficacy scale to assess the self efficacy among secondary school teachers. Initially, there were 166 items in the scale covering four dimensions of self efficacy- mastery experiences, vicarious experiences, social persuasion and psychological and affective states. After discussions with the experts in the field of education, the items were reduced to 86. After going through the process of item analysis, the final draft of the scale was prepared consisting of 44 items. The reliability of the scale was calculated using test- retest method which came out to be 0.80. Internal validity and concurrent validity was worked out. Concurrent validity index was found to be 0.69.

Keywords: Self Efficacy, Secondary School Teachers

In today's scenario one of the main goals of school education is to achieve excellence. This goal highly depends upon the administrators, principals and teachers employed in the schools and can only be achieved if the personnel employed are committed, enthusiastic, hard working, intellectually and emotionally energetic in their work and confident. In order to achieve academic excellence, teachers prefer to use varieties of techniques, innovations and strategies to enhance learning among students and hence achieve academic excellence.

One of the most important characteristic of teachers in relation to commitment, cooperation, hard work and teaching experience is self efficacy which can help in achieving academic excellence by influencing the lives of children. In order to manage the classrooms, achieve academic excellence, in addition to commitment, there is a need of sense of belief that can make a difference in the lives of children they are teaching and that those children are learning.

Bandura(1977) renowned social cognitivist identified in his publication- Self efficacy Toward a unifying Theory of behavioral change. What he believed was an instrumental aspects missing from

all theories of the day including his own social learning theory – self efficacy. Individuals perceive their capabilities that impact choices of activities and persistence in reaching a goal. Bandura referred to these self perceptions as self efficacy. It is these beliefs of self perceptions to achieve their goals and accomplish their task than their actual ability (Bandura, 1986, 1997)). The people who believe that they have the capability to be successful make greater and lengthier attempts to achieve the desired goals. Bandura (1986) has defined self efficacy as 'people's judgments of their capabilities to organize and execute course of action required to attain designed types of performance.' According to Gist and Mitchell (1992) "Self efficacy is a judgment about task capability that it is not inherently evaluative." Research has suggested that teacher efficacy is linked with student teachers beliefs about control and motivation (Woolfolk & Hoy, 1990) also, self-efficacy increases with teachers' experience and face to face interaction in the classroom. Teacher's individual capabilities and confidence with the day to day routines in the classroom has been linked to an increase in self efficacy level (Yeung & Watkins, 2000)). Higher efficacy is correlated with teachers experience during student teaching practice.

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Teacher efficacy as a belief acts as a guide for teachers with respect to behavior, decisions and motivation to teaching. The idea of self efficacy was first developed in 1966 by Julian Rotter in his social learning theory. This basic idea behind this theory is that one's personality represents an interaction of the individual with the environment.

Self efficacy has to do with self perception of competence rather than actual level of competence. This is an important distinction because people regularly overestimate or underestimate their actual abilities, and these estimations may have consequences for the courses of action they choose to pursue or the effort they exert in those pursuits. Over- or underestimating capabilities may also influence how well people use the skills they possess. "A capability is only as good as its execution. The self assurance with which people approach and manage difficult task determines whether they make good or poor use of their capabilities. Insidious self doubt can easily overrule the best of skills." (Bandura, 1997).

SOURCES OF SELF EFFICACY

Self efficacy beliefs are influenced by different sources. Bandura (1977) proposed four sources of self efficacy. These are as follows:

- **Mastery Experiences:** The first important source of enhancing self efficacy is mastery experiences. Person's self efficacy depends on experiences. If a person experiences easy successes every time they will come to expect quick results and are easily discouraged by failures. But, if a person experiences success by obstacles and through continuous and sustained efforts, a good sense of efficacy develops.
- **Vicarious Experiences:** The second source of increasing self efficacy beliefs is through the Vicarious Experience. Self efficacy can be increased by observing others success in task, the person assumes he/she also possesses the capabilities to perform the task. So, positive belief in capabilities is through seeing the success of persons or colleagues similar to our self or oneself. By the same time, on observing the person's failure inspite of high efforts, lower observer's judgment of their own efficacy and

lessens their efforts. Thus, modeling influences self efficacy.

- **Social Persuasion:** Social Persuasion is the third source of enhancing people's self efficacy beliefs. When teachers are praised and persuaded by colleagues and supervisors that they can teach successfully, surely, it will increase teachers self efficacy. Positive or optimistic persuasion may develop self confidence and motivate people to achieve their targets, while negative persuasion may decline self efficacy beliefs.
- **Emotional and Physical Reactions:** Social Persuasion is the third source of enhancing people's self efficacy beliefs. When teachers are praised and persuaded by colleagues and supervisors that they can teach successfully, surely, it will increase teachers self efficacy. Positive or optimistic persuasion may develop self confidence and motivate people to achieve their targets, while negative persuasion may decline self efficacy beliefs.

CONSTRUCTION METHODOLOGY OF SELF EFFICACY SCALE

Self efficacy scale was developed with the objective to know the efficacy level of secondary school teachers working in government schools because this will help in knowing that how much capability they have to manage their classrooms. For the construction of the scale, literature related to self efficacy was surveyed and scanned. To acquaint with the existing scales related to this variable, investigator studied the manuals of various tools and books, articles and journals pertaining to self efficacy of teachers. Discussion was also held with the various experts from the field of psychology and education to seek their views to plan appropriately a good scale for the assessment of self efficacy of secondary school teachers.

TARGET POPULATION

This scale is meant for Indian Secondary School teachers who are teaching 9th and 10th classes.

TYPES OF TEST ITEMS

Present scale is a Likert type five point scale. Every item is in a statement form. Five response categories were provided for responding to every item. These

response categories were: Strongly Disagree, Disagree, Undecided, Agree, Strongly Agree.

The subject has to respond to every statement by selecting the most appropriate category indicative of his true feelings for the given statement.

PRE- TRY OUT OF THE TEST

Initial draft consisting of 166 questions covering the four dimensions: mastery experiences, vicarious experiences, social persuasion and physiological and affective states were prepared. The following points were kept in mind while making preliminary draft of the test.

- Items were selected pertaining to the above four dimensions only.
- Equal weightage was given to each dimension.
- All the items were thoroughly evaluated by the experts as well as by the investigator in order to remove vagueness, ambiguous terms and language difficulty in the format.
- Efforts were made to avoid the duplicity of content in the items.

The first draft containing 166 items was given to 10 experts for their valuable suggestions. These experts were chosen from the field of education and psychology. Some of them were working at the college level and some of them were university professors. Scales along with its objectives was given to all the experts. Working on their valuable suggestions 80 questions were deleted from the scale due to inherent problems and now the scale consisting of 86 items was ready to be used at try-out stage.

TRY-OUT OF THE TEST

Before undertaking the task of item analysis the scale was administered to a sample of 10 teachers to remove the language difficulty, if any reported by them in understanding clearly the different items.

On the basis of the results, first draft consisting of 86 items was found to be suitable to be used for final tryout.

FINAL TRY OUT

The adequacy of a test depends upon the care with which the items of the test have been chosen. For this purpose the second draft of the self efficacy scale consisting of 86 items was administered to 100 secondary government school teachers working in rural and urban areas. Item discrimination index was worked out on the basis of obtained results

PROCEDURE OF SCORING

The present scale is a five point Likert scale. As the response categories chosen for the scale were: strongly disagree, disagree, undecided, agree and strongly agree, the marks given were- 5,4,3,2 and 1 respectively. The summated scores of all the statements give the total score of the subject.

ITEM DISCRIMINATION INDEX

The discrimination index of an item is determined by the extent to which the given items discriminate among high and low groups. To obtain high and low group Kelly's dichotomy was used. First of all scores of 100 teachers which was obtained through tryout were arranged in descending order of their performance. Then 27% top and 27% bottom scores formed the higher and lower group respectively which comes out to be 27 teachers in each group. In order to find out the discriminative power of the various items, the mean of every item for the higher and lower group were compared.

On the basis of calculations only those items having discriminative power in the range of 0.40- 0.70 were selected for the purpose of further administration. This leads to the elimination of 42 items out of 86 items used previously. Consequently 44 items were retained in the final draft.

Table 1 : Dimensions of Self Efficacy Scale (Final Draft)

Area/Aspect	No of Items
a) Mastery Experience	16
b) Vicarious Experience	10
c) Social Persuasion	11
d) Psychological and Affective States	7
Total	44

RELIABILITY OF THE SCALE

Reliability refers to the precision or accuracy of the measurement of scores. It means the degree to which the test agrees with itself i.e. if the test is administered under similar conditions at different times; the result should not vary very much. In the present study, co-efficient of reliability was determined by test retest method. The final draft of the self efficacy scale was administered to a sample of 200 secondary school teachers. After a gap of one month same test was administered to the same sample. Product moment correlation was calculated between the test- retest scores, which came out to be 0.80 which is indicative of high reliability of the

scale.

VALIDITY OF THE SCALE

Validity refers to the degree to which it measures, what it proposes to measure. Validity of a test must be established prior to its use and is the accuracy of specific predictions, made from the test.

INTERNAL VALIDITY

Internal validity is expressed by the inter correlations of the areas of the scale and the correlations between the area scores on the one hand and the total scores of the scale on the other hand. The derived correlation matrix is presented in the Table 2.

Table 2: Showing Inter-correlation among Various Areas of Self Efficacy Scale (N=200)

Areas	Mastery Experiences	Vicarious Experiences	Social Persuasion.	Physiological and Affective states	TOTAL
Mastery Experiences	1	0.67	0.63	0.61	0.82
Vicarious Experiences		1	0.66	0.62	0.74
Social Persuasion			1	0.59	0.68
Physiological and Affective states				1	0.64
TOTAL					1

CONCURRENT VALIDITY

To establish the validity of the present scale the concurrent validity index was worked out. Under this type of validity the Pearson product moment correlation index between the present scale and the concurrent scale, (Self Efficacy Scale by Mathur and Bhatnagar, 2012), measuring the same construct was calculated. Validity index comes out to be 0.69 which indicated that our test has a very good validity index and it can be safely used as a tool of measurement.

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