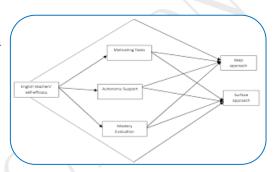_____

TEACHERS SELF-EFFICACY SCALE: DEVELOPMENT AND VALIDATION

Mani M.[1] and Dr. M. Mahendra Prabu[2]
[1]Research Scholar,Department of Education,Alagappa University,Karaikudi.
[2]Assistant Professor,Department of Education,Alagappa University,Karaikudi.

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ABSTRACT :

The present investigation analyzed that Goodness of Fit Test and a total correlation coefficientof scores on the Teacher's Self-Efficacy Scaleacross the sample of 50 teachers of Dindigul District of Tamil Nadu, India.Self-efficacy theory posits that self-efficacy persuasions are connected to exact exercises.The reference indicates for decisions tend to be innate within the task prerequisites. Therefore it was assumed that the Teacher Self-Efficacy included fourdimensionexercises to be specificPerformance outcomes, Self-Modelling,Verbal Encouragement,andEmotional State. The table shows that nine items are detained on the scale. And, 41 items are selected out of 50 items. The reliability of Teacher's Self-Efficacy Scale was established by calculating Cronbach's alpha and Split Half methods. The split-half reliability value is 0.744 (N=41), and the Cronbach's alpha reliability value is 0.900 (N=41).

KEYWORDS : *Teacher Self Efficacy, Development, Validation, Factor analysis, andCronbach's alpha.*

INTRODUCTION:

There are studies to support that one note his or her"Self-efficacy relation to teaching skill is undeniably related to positive teaching (Bandura 1997).The primary factor influencing teacher efficacy is accepted to be the understanding of four wellsprings of data proposed by Bandura (1997): vicarious experiences, verbal persuasion, emotional arousal, and mastery experience. Be that as it may, as reliable with our earlier knowledge, efficacy recognitions are accepted as undertaking and setting explicit; (i.e.teachers show differentstages of the feeling of efficacy specifically circumstances or for teaching diverse subjects).

Bandura (1986, 1997, and 2006) defined self-efficacy as ''individuals' decisions of their capacities to establish and execute progressof action required delivering given fulfilments'' (p. 3), which implies that self-efficacy can be comprehended as a person's conviction about what the individual can do effectively (Bong 2006). In respect to teaching, Dellinger et al. (2008) characterized educator self-efficacy as teachers' ''convictions in their capacities to perform explicit training assignments at a predefined level of value in a predefined circumstance'' (p. 752).Dudo (2013) studied that one method of helping to increase genius's self-efficacy to engage withthe public is science communication exercise. He takes note of that genius who have high correspondence self-efficacy feel enabled to engage in with the people, and that those who have been prepared tend to participate in more open science events than the individuals who have not. For sure, various programs have been created with the aim of enhancing geniuses' self-efficacy for interactive with general society.

There are studies to support that have one perceive his or her abilities are connected to how well he or she will achieve (Bandura, 1993). From this article, it has been implied thatpoor performance

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may be connected, not to a dearth of skills, but to a dearth of self-confidence orself-efficacy (Bandura, 1993).Teacher self-efficacy has also been an investigationthat positive links to overall well-being and student presentation (Zee &Koomen, 2016).Enochs and Riggs (1990) declared that change a teachers' behavior, such as their selecting not to facilitate science programmes as a result of low self-efficacy, we need to focus our consideration on their views about their skills to facilitate those programmes. This study discovers the use of action research as an instructional tool and improvement of elementary pre-service teachers' beliefs about their skills to teach science.

TEACHER'S SENSE OF EFFICACY
Goddard et al. (2000)concluded that the undertakinganalysis and personal ability dimension was strongly associated. Teacher self-efficacy is defined as the range to which the teacher trustshe/shehave the capacity to affect student presentation (Berman et al., 1977), or a teacher'strust/persuasion that they can impacthow well students learn, even those who may be problematic/unresponsive (Guskey et al., 1994). Teacher self-efficacy discusses to the teachers'confidence in his / her ability to organize and perform courses of action required to effectivelyachieve a specific training task in a specific context (Tschannen-Moran et al., 1998).

NEED FOR THE CURRENT STUDY
Teachers'performance a vital role in reshaping the peopleby the improvement of studentsassumed to them inschools. The security in Primary instruction helps the students to improve good character, and sound knowledge about attention, health and also helps them to be economically sound. But the real results are contingenton the teacher's Self-Efficacy. The Suggestionthat literature reveals that various version of teachersself-efficacy scalewas developed mainly in the United States of America (Faleye, 2008). In India, no graveattentions have beengiven to the development of measuring tool for the construct Teacher Self-Efficacy. Faleye, (2008) discussedthat empirically derivative factors structure of Teacher Efficacy Scale (TES) have not been agreed upon. Differencesexist in the factors structure of exploratory in addition topositive factors analyses of "Teacher Efficacy Scale"across researchers (Browers, 2003; Campbell, 1996, Tschannen-Moran &Woolfolk-Hoy, 2001). The way oforganizing teachers in western countries is changed from India. Hence, there was a need to develop instrumentin India to measure "Teacher Self-Efficacy" of teachers in general and Primary and Upper Primary teachers in the individual.

THE OBJECTIVE OF THE STUDY
The objective of the current study was to;
➢ The Develop Teacher Self-Efficacy Scale {TSES}
➢ The reliability of the Teacher Self-Efficacy Scale {TSES}
➢ Evaluation of the Teacher Self-Efficacy Scale {TSES}

SAMPLE
The tool was distributed to 60 teachers of Dindigul Educational District who was selected randomly.This teacher was from Primary Schools / Secondary Schools and Primary Sections of Middle Schools of Dindigul district.Among them, 50 teachers answered completely. Hence the sample for the current studywas 50.

DEVELOPMENT OF TEACHER'S SELF EFFICACY SCALE (TSES)
Preparation of test items
Items selected for the Teacher Self Efficacy Scaleconsisted of the following dimension.

Performance outcomes
The most important source of information derives from Enactive mastery since they provide the most accurate information to learners on their skill to do whatsoever it takings to succeed. As

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learners master talents, they have a habit of to increase the expectation that they will be able to master those talents further. Success tends to increase self-efficacy, while failure tends to lower it (Bandura, 1997).

Teachers should have the self-efficacy in handling the classroom excellently.He should have the capacity of developing knowledge, abilities,and values among the students by agreeing on correctteaching methods.

Self-modeling

Self-Efficacy beliefs are also influenced by Self-modelling (vicarious experiences) mediated through modeledachievements.Therefore, modelingserves as another tool for endorsing self-efficacy. The more closely the observer classifies withthe models, the sturdier will be the influence on self-efficacy. Perceiving others achieve tasks effectivelyincreasesexpectations of personal achievement on the same task (Bandura, 1997).

Verbal Encouragement

The thirddimension means of modifying self-efficacy is Verbal Encouragement (verbal persuasions). This denotes to others encourage alearner that he/she is capable of following at a particular task (Driscoll, 2000). Bandura (1997) considersVerbal Encouragement (verbal persuasion) as a weak process of altering self-efficacy beliefs. While Verbal Encouragement may be capable ofpersuading the learner to achieve certain tasks, it tends to be ignored by the learner if it is not confirmed tobe successful.

Emotional State

The finaldimensionmeansEmotional State (emotional arousal)works as an indicator to the learner (Ex; learners can stop presentation the task because they tend to correlated emotional areState usual such as nervousness or fear as signs ofindividualinability (Bandura, 1997).

DRAFT TOOL

The following table equips the number of statements arranged for the Teacher's Self-Efficacy Scale.

Table 1:Dimension wise number of statements of the Teacher's Self-Efficacy Scale

S.No	Dimension	No.of Items
1.	Performance outcomes	14
2.	Self-modeling	12
3.	Verbal Encouragement	12
4.	Emotional State	12
	Total	50

VALIDATION OF THE TOOL

The validity of a tool is the degree to which it measures and also supposed to measure. The validity of the currenttool is tested in terms of content validity, item validity, and constructs validity.

Content validity

The items on the test represented the entire range of possible items the test questions may be drawn from a large pool of items that cover a broad range of topics.

In order to establish the content validity of the prepared tool, the investigator submitted the draft tool to the research guide for suggestions and modification.After incorporating the suggestions given by the guide, the investigator in consultation with the research guide submitted the two copies of the draft tool to three other expert'ssupervisory Doctoral studies in Education in other Colleges and universities.

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After studying the draft tool the experts gave some suggestions to modify certain words and expressions for better clarity. The investigator carried out those changes in the draft tool and statements, established the content validity of the tool prepared.

Item Validity

To found the statistical validity the modified Draft tool was administered to 50 teachers working in Primary and Upper Primary schools in Dindigul Educational District. After scoring the reactions of the respondents, the validity of everything has been set up by subjecting the statistics to 'Goodness of Fit Test' which is generally called one sample test of chi-square. It is one of the several applications of chi-square test(Cohen Louis 1976).Now it is used to test the hypothesis shaped for every statement in the draft tool that the answers establish under the five-point scale ranging from very great extent, a great extent, moderate extent, some extent,and small extent are not by choice.

Table – 2: The Item-Dimension total Goodness of Fit Test

Item No	Goodness of Fit	Value Table Value at 0.01 Level	Remark	Item No	Goodness of Fit	Value Table Value at 0.01 Level	Remark
1.	39.640	13.28	Rejected	26.	27.040	13.28	Rejected
2.	25.480	13.28	Rejected	27.	22.360	13.28	Rejected
3.	51.600	13.28	Rejected	28.	12.520	13.28	Accepted
4.	0.320	13.28	Accepted	29.	21.280	13.28	Rejected
5.	24.520	13.28	Rejected	30.	14.560	13.28	Rejected
6.	17.080	13.28	Rejected	31.	39.640	13.28	Rejected
7.	20.320	13.28	Rejected	32.	31.720	13.28	Rejected
8.	19.360	13.28	Rejected	33.	22.840	13.28	Rejected
9.	43.960	13.28	Rejected	34.	24.520	13.28	Rejected
10.	20.320	13.28	Rejected	35.	37.960	13.28	Rejected
11.	49.480	13.28	Rejected	36.	22.360	13.28	Rejected
12.	35.320	13.28	Rejected	37.	25.480	13.28	Rejected
13.	17.080	13.28	Rejected	38.	48.080	13.28	Rejected
14.	31.360	13.28	Rejected	39.	30.160	13.28	Rejected
15.	31.360	13.28	Rejected	40.	22.360	13.28	Rejected
16.	9.760	13.28	Accepted	41.	40.840	13.28	Rejected
17.	55.280	13.28	Rejected	42.	21.280	13.28	Rejected
18.	17.440	13.28	Rejected	43.	25.480	13.28	Rejected
19.	45.520	13.28	Rejected	44.	2.000	13.28	Accepted
20.	12.280	13.28	Accepted	45.	22.360	13.28	Rejected
21.	19.240	13.28	Rejected	46.	22.120	13.28	Rejected
22.	8.320	13.28	Accepted	47.	23.080	13.28	Rejected
23.	19.480	13.28	Rejected	48.	31.720	13.28	Rejected
24.	45.600	13.28	Rejected	49.	40.840	13.28	Rejected
25.	42.000	13.28	Rejected	50.	25.480	13.28	Rejected

The above table furnishes the "Goodness of Fit value" for each one of the 50 items. The table shows that by removing item number 4, 16, 20, 22, 28, and 44 the remaining 44 Statements are to be retained as the stated null hypothesis for this statement are rejected at 0.01 levels.

Construct Validity

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It's using the tabulated data; the Item-Dimension total correlation coefficient was computed for each statement to establish the construct validity of the afresh formed questionnaire. Dimensions such as Performance outcomes, Self-modelling, Verbal Encouragement, and Emotional State are incorporated in the Statements. Table – 3 reveals the Item-Dimension total correlation coefficientfor the 44 items.

Table – 3: Item-Dimension total correlation co-efficient Value of Teacher's Self-Efficacy Scale.

Items No	γ-value	Remarks	Items No	γ-value	Remarks
1.	1.000	Selected	23.	0.395	Selected
2.	0.411	Selected	24.	0.311	Selected
3.	0.098	Detained	25.	0.059	Selected
4.	0.167	Selected	26.	1.000	Selected
5.	0.160	Selected	27.	0.313	Selected
6.	0.162	Selected	28.	0.152	Selected
7.	0.169	Selected	29.	0.167	Selected
8.	0.316	Selected	30.	0.180	Detained
9.	0.162	Selected	31.	0.172	Selected
10.	0.472	Selected	32.	0.411	Selected
11.	0.234	Selected	33.	0.238	Selected
12.	0.160	Selected	34.	0.408	Selected
13.	0.173	Selected	35.	0.395	Selected
14.	0.173	Selected	36.	0.816	Selected
15.	0.166	Selected	37.	0.311	Selected
16.	0.128	Selected	38.	0.356	Selected
17.	0.210	Selected	39.	0.266	Selected
18.	0.092	Selected	40.	0.201	Selected
19.	0.318	Selected	41.	0.394	Selected
20.	0.210	Selected	42.	0.254	Selected
21.	0.177	Detained	43.	0.816	Selected
22.	0.154	Selected	44.	0.356	Selected

Finally, 3 items are detained on the scale. And, 41 items are selected out of 44 items.

From the above table, it may be seen that 41Statements are significantly correlated with their own dimensions, from now retained in the scale where-asthreestatements not securing significant correlation with their dimensionwas deleted.

Table 4: Dimension Total: - Co-efficient Correlation of Teachers' Self Efficacy Scale

S.No	Dimension	'r' value	Significance
	Performance outcomes	1.000	0.00
	Self-modelling	0.754	0.00
	Verbal Encouragement	0.466	0.00
	Emotional State	0.431	0.00

As the correlation between dimensions and total scores of Teacher's Self-Efficacy Scale was significant at 0.01 levels, the influence of dimension to the total score is confirmed.

Factoranalysis

In conclusion, the researchers have decided to make the development of validation complete through Factor Analysis. The moderately validated draft tools with jumbled items of the four dimensions were again administered to 50 focuses chosen by random from school teachers of the Dindigul Educational district. The presented data was exposed to Factor Analysis. The process of factor

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analysis on-going with the removal of communality values for all the 41items confirmed in the draft tool.

Table 5: Communality values of Teacher's Self Efficacy Scale.

Item No	Communality value	Item No	Communality value	Item No	Communality value	Item No	Communality value
1.	.876	12.	.657	23.	.811	34.	.881
2.	.841	13.	.866	24.	.757	35.	.631
3.	.776	14.	.663	25.	.675	36.	.912
4.	.932	15.	.940	26.	.894	37.	.834
5.	.951	16.	.873	27.	.828	38.	.765
6.	.801	17.	.762	28.	.780	39.	.712
7.	.889	18.	.816	29.	.699	40.	.872
8.	.951	19.	.922	30.	.758	41.	.885
9.	.852	20.	.659	31.	.743		
10.	.848	21.	.897	32.	.808		
11.	.932	22.	.688	33.	.876		

Table 5; furnishes the removed communality values for all the 41 items ranging from .631to .940, showing their appropriateness to be included in the tool. The factor was given the name by analyzing the items for their nature and quality. The identified fourdimensions are Performance outcomes, Self-modelling, Verbal Encouragement, and Emotional State. Thus the scale containing 41 items meant for Teacher's Self-Efficacy Scale was finalized.

Dimension wise item categorization

Table 6: The different dimensions of the final form of the tool are furnished.

S.No	Dimension	Statements
	Performance outcomes	1, 5, 9, 13, 17, 21, 25, 29, 32, 35, 38, 41
	Self-modelling	2, 6, 10, 14, 18, 22, 26
	Verbal Encouragement	3, 7, 11, 15, 19, 23, 27, 30, 33, 36, 39
	Emotional State	4, 8, 12, 16, 20, 24, 28, 31, 34, 37, 40

RELIABILITY

The reliability of Teacher Self-Efficacy Scale was established by calculating Cronbach's alpha and Split Half method. The split-half reliability value is 0.744 (N=41), and the Cronbach's alpha reliability value is 0.900 (N=41).The Cronbach's alpha value for each dimensionand total are as shown in Table 7.

Table 7: Cronbach's alpha value of items of Teacher's Self-Efficacy Scale

S.No	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	S.No	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	S.No	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1.	.421	.898	15.	.417	.898	29.	.396	.898
2.	.536	.896	16.	.369	.898	30.	.324	.899
3.	.181	.901	17.	.544	.896	31.	.392	.898
4.	.528	.896	18.	.592	.895	32.	.402	.898

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5.	.470	.897	19.	.401	.898	33.	.359	.898
6.	.357	.898	20.	.256	.900	34.	.330	.899
7.	.363	.898	21.	.511	.896	35.	.337	.899
8.	.470	.897	22.	.460	.897	36.	.414	.898
9.	.599	.895	23.	.359	.898	37.	.270	.900
10.	.196	.900	24.	.386	.898	38.	.477	.897
11.	.528	.896	25.	.312	.899	39.	.426	.898
12.	.017	.903	26.	.582	.895	40.	.396	.898
13.	.477	.897	27.	.333	.899	41.	.324	.899
14.	.541	.896	28.	.355	.898			

The calculated values of 'Cronbach's Alpha' support the internal reliability of the tool.

CONCLUSION

The final varieties of the Teacher's Self-Efficacy Scale are designed with the 41 valid items and four dimensions. This scale was a Likert Type five-point rating scale "Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree". The scoring was 5, 4, 3, 2, and 1 for Strongly Agree. Agree, Undecided, Disagree andstrongly disagree separately for positively expressed items. The highest score indicates the existence of high self-efficacyin teachers.

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Mani M.
Research Scholar,Department of Education,Alagappa University,Karaikudi.

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