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Developing a Research Tool to measure the self-efficacy of primary school students

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Abstract

The main aim of this article is to develop a research tool to measure the level of self-efficacy among the primary school students. So many self-efficacy tools are available at outside but all these are useful to secondary school students only, for this reason the self-efficacy tool for primary school students were prepared and standardized by the researchers. The sample consists of 150 primary school students were selected for pilot study. The reliability of the tool 0.674 by Cronbach method, validity of the tool 0.822 were established by the test constructors. Students generally avoid tasks when their self-efficacy is low, but undertake tasks when their self-efficacy is high. self-efficay plays a vital role in academic performance of students.

Keywords: **self-efficacy, primary school students, academic performance.**

INTRODUCTION

Self effectuality is outlined as associate degree individual's belief regarding his/her ability, to hold out a task or perform sure behaviours with success. It is contend that Self effectuality will influence a person's life. .Influence of Self-efficacy on Personality Traits Research has shown that Self-efficacy influences various traits in the personalities of people. Bandura (1996) have argued that qualities such as motivation, perseverance and resilience, and the power think analytically are indications of positive self-efficacy. Thus, just

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praising the ability of the student will not necessarily induce his/her self-efficacy. Rather, the accent ought to air laudatory students' effort and persistence. This is particularly pertinent to the mathematics class. Even if succeeding in mathematics appears to be an uphill task, perseverance in the venture may yield success.

It is a measure of an individual's perception of own ability to complete a specific task or to accomplish a certain goal. According to Bandura's (1988) social cognitive theory, self-efficacy can play an important role in determining how an individual perceives and approaches various tasks and goals. Individuals with high levels of self-efficacy approach problems as tasks that must be mastered while those with low self-efficacy see them as hurdles to be avoided (Bandura, 1998). Thus, self-efficacy does not only play an important role in identification of initial goals but also influences the level of motivation towards accomplishing those goals (Bandura, 1993). Bandura's (1998) social cognitive theory has some overlap with Vygotsky's well-known concept of zone of proximal development from the latter's sociocultural theory of cognitive development, in the notion that human beings learn from their environments including experiences of others around them (Vygotsky). Bandura has additionally argued that differences in self-efficacy can result in fundamental differences in how individuals view the world around them. Those with high self-efficacy generally believe that they have a higher degree of control over their lives and what actions they take and choices that they make directly affect their lives. On the other hand, individuals with low self-efficacy generally believe that such actions and choices have little effect on events in their lives and that the course that their lives take falls more or less outside their personal control (Bandura, 2001). Some studies, such as Judge et al. (2002), have asserted that psychological constructs such as generalized self-efficacy, self-esteem, neuroticism, and locus of control, in fact, measure the same underlying factor and are thus highly related concepts. Other studies have highlighted the importance of variables related to self-efficacy such as perseverance, confidence, and motivation. For example, the effect of stereotyping in math education has been shown to have a negative effect on a student's confidence. Similarly, when students make mistakes and do not have adequate teacher support, they may develop a fixed mind-set and equate their mistakes with their lack of ability in problem-solving (National Association of Mathematics Advisers (NAMA), 2015). Such fixed mind-sets can permanently hinder learning and have long-term consequences.

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OBJECTIVE

- To develop a research tool to measure the self-efficacy of primary school students

SELF EFFICACY SCALE (SES)

The self efficacy scale was constructed by the researcher and consists of five sections section- 1 Talks about physical self efficacy and section -2 Talks about social self efficacy section -3 about emotional self efficacy Section- 4 Related to academic self efficacy and Section 5 Tips with confidence self efficacy.

CONSTRUCTION OF THE SCALE

The scale is made on three point likert scale, having options like yes,I don't know and No. Keeping in view of the objectives and nature of the study, the items for tool - SES for the students were constructed. Initially there were 70 items prepared by the researcher. It was revised and evaluated by the experts. The initial draft of the tool was given to six experts in the field of education. Experts were requested to critical evaluation of the tool. Researcher edited and corrected the tool after the evaluation. There were 32 items made for the second draft of the tool. It was carried out with pilot testing.

DESCRIPTION OF THE TOOL

Researcher developed a tool – Self efficacy Scale (SES) for the students. It was constructed and standardized by the researcher to study the self efficacy among primary school students. The researcher reviewed a lot of literature and consulted experts to frame the items in the tool. It consists of 32 items, including 20 positive statements and 12 negative statements. It is shown in the table-1

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Table-1 shows the positive and negative statements included in the tool

S. No	Statement	Items	Number of items
1	Positive statements	1,3,4,6,8,10,12,13,15,16,18,20,21, 23,24,28,29,30,31,32.	20
2	Negative Statements	2,5,7,9,11,14,17,19,22,25,26,27.	12
Total			32

Each item is anchored by 3 ratings such as Yes,I don't know, No. The tool-SES for students comprised with 5 dimensions such as 5 Dimension wise items included in the tool is shown in the table-2

Table-2: Shows the dimension with item numbers in the tool-SES.

S.No	Dimension	Item. Nos.	Number of items
1	Physical Self-efficacy	1,2,3,4,5,6.	6
2	Social self-efficacy	7,8,9,10,11,12.	6
3	Emotional self-efficacy	13,14,15,16,17,18.	6
4	Academic Self-efficacy	19,20,21,22,23,24,25.	7
5	Confidence Self-efficacy	26,27,28,29,30,31,32.	7
Total			**32**

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PILOT STUDY

For first tryout, the tool was administered on 10 students from 5 different schools. This tryout helped the researcher in method of administration and in correcting the items. The tool with 32 items was administered to 150 primary school students for second tryout. This tryout was considered for item analysis.

ITEM ANALYSIS OF SES

In order to determine the discriminative power and significance of items for the scale the $|^2$ (Chi-Square) values for each of the statements were calculated. The items those $|^2$ (Chi–Square) values ≤ 13.82 at the 0.001 level for df = 2 were discarded, others were retained. The details of the chi-square values of each item is presented in the table-3

(Chi-square value table value with df 2 = 13.82 at 0.001.The calculated value less than the table value were deleted (9,10,11,17,22,27,30,31) (number of items deleted=8)

Table-3: Shows the chi-square values of the each item of SES

Item	**Yes**	I don't know	**No**	**Chi-Square**	**Remarks**
SES1_1	4	19	127	180.120	Retained
SES1_2	37	37	76	20.280	Retained
SES1_3	26	35	89	107.227	Retained
SES1_4	27	27	96	62.067	Retained
SES1_5	59	26	65	17.640	Retained
SES1_6	26	39	85	38.440	Retained
SES2_7	82	21	47	37.480	Retained
SES2_8	20	47	83	39.960	Retained

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SES2_9	54	31	65	12.040	Deleted
SES2_10	37	45	68	10.360	Deleted
SES2_11	46	36	68	10.720	Deleted
SES2_12	20	35	95	63.000	Retained
SES3_13	44	31	75	20.440	Retained
SES3_14	22	59	69	24.520	Retained
SES3_15	46	25	79	29.640[a]	Retained
SES3_16	20	34	96	65.440	Retained
SES3_17	41	41	68	9.720	Deleted
SES3_18	45	30	75	21.000	Retained
SES4_19	79	39	32	25.720	Retained
SES4_20	19	53	78	35.080	Retained
SES4_21	27	42	81	31.080	Retained
SES4_22	51	40	59	3.640	Deleted
SES4_23	30	40	80	28.000	Retained
SES4_24	40	28	82	32.160	Retained
SES4_25	75	49	26	24.040	Retained
SES5_26	80	25	45	31.000	Retained
SES5_27	37	52	61	5.880	Deleted
SES5_28	32	47	71	15.480	Retained
SES5_29	19	31	100	76.440	Retained
SES5_30	39	42	69	10.920	Deleted
SES5_31	32	54	64	10.720	Deleted

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SES5_32	33	41	76	20.920	Retained

SCORING PROCEDURE

The respondent is provided with three alternative to give his or her response on point scale yes,I don't know and No with numerical weights 3, 2, 1 respectively for positive statements. It is reversed for the negative statements.

FINAL DRAFT OF THE TOOL

All the 32 scale items of SES were analyzed with Chi-square values. The item, which is significant at the 0.001 level were retained. Those items, which were not significant at 0.001 levels discarded. Finally 24 items were retained and 8 were deleted (items 9,10,11,17,22,27,30,31) in this analysis. Dimension wise deleted and retained items are shown in the table-4.

Table-4: Shows dimension wise deleted and retained items in item analysis of SES

S.No	**Dimension**	**Item. Nos.**	**Deleted items**	**Retained items**
1	Physical Self-efficacy	1,2,3,4,5,6.		1,2,3,4,5,6.
2	Social self-efficacy	7,8,9,10,11,12.	9,10,11.	7,8,12
3	Emotional self-efficacy	13,14,15,16,17,18.	17	13,14,15,16,18.
4	Academic Self-efficacy	19,20,21,22,23,24, 25.	22	19,20,21,23,24,25.
5	Confidence Self-efficacy	26,27,28,29,30,31, 32.	27,30,31.	26,28,29,32

STANDARDIZATION OF THE TOOL.

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The total 32 items constituted the final form of the tool SES for students. It was further standardized by the validation of the test by establishing reliability and validity. The tool was administered on a sample of 150 for the standardization.

RELIABILITY

To establish the reliability of the tool, researcher used Split half method and Cronbach alpha method. Researcher administered the tool on a sample of 150 students. The methods and reliability coefficient of the tool-SES is shown in the table-5.

Table-5

S.No	Methods of the reliability	reliability coefficient	No of Items	Remarks
1	Cronbach alpha	0.674	32	Good
2	Split half method	0.721	32	Good

Table-5 reveals that the reliability coefficient of the tool according to test-retest method is 0.94, which indicates the good reliability of the tool; the same table-5 shows the reliability coefficient according to Cronbach's method 0.92, which indicates good reliability of the tool.

VALIDITY OF THE TOOL

Validity of the tool was established by determining its coefficient (Validity= square root of Reliability) i.e. 0.822, which indicates good validity. Item validity of the tool was also established by using item total correlation matrix .

CONCLUSION

This self-efficacy tool focuses on collecting information of primary school students and also identifies the level of self –efficacy among the primary school students. self-efficacy plays a very important role in academic performance of students . A student's belief about his or her ability and capacity to accomplish a task or to deal with the challenges of life.

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