

Vol II Issue IX

ISSN No : 2249-894X

*Monthly Multidisciplinary
Research Journal*

*Review Of
Research Journal*

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RNI MAHMUL/2011/38595

ISSN No.2249-894X

Review Of Research Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial Board readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

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DEVELOPMENT AND STANDARDIZATION OF AN ATTITUDE SCALE FOR USING MODERN TECHNOLOGY (ASUMT)

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Abstract:

Today the need of modern technology is of great importance in teaching and learning process, as it facilitates effective teaching and learning. Though it has a lot of applications in various fields, one should not forget its applications in the field of Education. If the teachers develop favourable attitude towards the use of modern technology in teaching, then they may try to make use of this technology often in teaching and it will in turn make the learning process simple and effective. The study of attitude towards the using modern technology in teaching and learning is a significant one and for which the investigator have decided to develop and standardize a scale to measure it.

KEY WORDS:

Modern Technology, Attitude Scale

INTRODUCTION

Technology is the making, modification, usage, and knowledge of [tools](#), [machines](#), techniques, [crafts](#), [systems](#), methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function. It can also refer to the collection of such tools, machinery, modifications, arrangements and procedures. Technologies significantly affect human as well as other animal species' ability to control and adapt to their natural environments. The study of school and college students' and school and college teachers' attitude towards the use of modern technology in teaching and learning is very much needed. As there is no suitable tool available to study the school and college students' and teachers' attitude towards the use of modern technology in teaching, the investigator have decided to construct and standardize a scale to measure the attitude towards the use of modern technology in teaching and learning. This Likert type scale is a five- point scale of „Strongly Agree“, „Agree“, „Undecided“, „Disagree“ and „Strongly Disagree“. As many as 60 items have been collected from the various sources like Experts in ICT, Teacher Educators, Books, Journals, Internet and so on.

PILOT STUDY

This scale with 60 items has been administered to the sample of 200 students and teachers (100 students and 100 teachers) studying and working in different higher secondary schools and different colleges of Madurai District, Tamil Nadu, India, in order to carry out the pilot study. Then their responses have been scored carefully and their marks secured by all the samples have been arranged in the descending order from the highest scorer to the lowest scorer. Then they were subjected to item analysis.

ITEM ANALYSIS

The next step in the standardization of an attitude towards the use of modern technology in teaching scale after pilot study is to find out the t-value of each item, which forms the basis for item selection in order to build up the final scale. The Likert type scale calls for a graded response to each item on a five-point scale ranging from “Strongly Agree”, to “Strongly Disagree”. The individual score for all the 200 teachers were ranked from the highest to the lowest score. Then 25% of the subjects with the highest total scores and 25% of the subjects with the lowest total scores were sorted out for the purpose of item selection. The high and low groups were selected, formed the criterion groups and each group was made up of 50 students (Edward. L. Allen, 1957).

It may be recalled that each item is followed by five different responses of “SA”, “A”, “UD”, “DA” and “SDA” in the attitude towards the use of modern technology in teaching and learning scale. Then each item was taken individually and the number of teachers who responded “SA”, “A”, “UD”, “DA” and “SDA” was found out both the high and low groups separately. Thus for all the 60 items, the number of teachers coming under each category was found out separately for both the high and low groups and the t-values for all the 60 items have been calculated with the formula suggested by Allen Edwards(1957). As many as 50 items having the t-value greater than or equal to 1.75 (Edward. L. Allen, 1957) have been chosen in order to form the final scale (vide: Table-I). Then this final scale has been administered to 200 samples of Madurai District, Tamil Nadu, India, in order to establish the scoring procedure, validity and reliability of this scale.

TABLE – I
ITEM SELECTED FOR ATUMTS

Item Number	't' Value	Item selected
1	2.08	S
2	2.02	S
3	5.93	S
4	4.08	S
5	5.96	S
6	1.77	S
7	5.82	S
8	1.79	S
9	5.62	S
10	5.46	S
11	6.42	S
12	5.98	S
13	2.42	S
14	5.32	S
15	4.86	S

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16	2.02	S
17	3.98	S
18	3.06	S
19	0.96	NS
20	1.02	NS
21	4.24	S
22	3.08	S
23	5.94	S
24	5.06	S
25	4.94	S
26	4.02	S
27	3.98	S
28	2.96	S
29	1.60	NS
30	1.32	NS
31	5.94	S
32	4.82	S
33	4.62	S
34	3.96	S
35	3.08	S
36	0.96	NS
37	2.95	S
38	1.26	NS
39	2.86	S
40	2.24	S
41	6.24	S
42	4.08	S
43	5.94	S
44	5.06	S
45	4.94	S
46	4.02	S
47	3.98	S
48	2.96	S
49	1.60	NS
50	1.32	NS
51	5.94	S
52	4.82	S
53	4.62	S
54	3.96	S
55	3.08	S
56	0.96	NS
57	2.95	S
58	1.26	NS
59	2.86	S
60	2.24	S

S – Selected

NS – Not selected

SCORING PROCEDURE

The attitude towards the use of modern technology in teaching and learning scale has 50 items, out of which 44 items are favourably worded and the remaining 06 items are unfavourably worded. An individual score is the sum of the scores of all the 50 items. The scores range from 50 to 250. Higher score indicates the favourable attitude towards the use of modern technology in teaching and learning and the details of scoring are given in the following table.

The scoring to the response given by the respondents should be like the following

TABLE – II

Response	Positive	Negative
SA	5	1
A	4	2
UD	3	3
DA	2	4
SDA	1	5

RELIABILITY:

Reliability refers to the consistency with which a test measures, whatever it measures. The concept of reliability suggests both stability and consistency of measurement. The investigator calculated the reliability analysis and it was given in the following table.

TABLE – III**TABLE SHOWING THE RELIABILITY METHOD AND CO-EFFICIENT VALUES**

METHOD OF RELIABILITY ANALYSIS	RELIABILITY CO-EFFICIENTS
Correlation between forms	0.627
Equal-length Spearman-Brown	0.639
Guttman Split-half	0.634
Unequal-length Spearman-Brown	0.619

VALIDITY:

Validity reveals the merits of our measurement. This attitude scale was given to the experts (20 members) in order to find out its content validity. The experts agreed that the items in the scale provided adequate coverage of the concept. This attitude scale also has construct validity.

PERCENTILE NORM:

The following table represents the percentile norm for this attitude scale.

PERCENTILE	SCORE RANGE	NORM
Below P ₂₅ (Q ₁)	Below 106	Unfavourable
P ₂₅ To P ₇₅ (Q ₁ to Q ₃)	Between 106 and 190	Average level
Above P ₇₅ (Q ₃)	Above 190	favourable

CONCLUSION

The investigator believe that this scale would be a contribution to the field of modern technology in Education and those who want to measure the attitude of students and teachers towards the use of modern technology in teaching and learning anywhere in this country will find this scale very useful.

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