

## Standardization and Calibration of E-Learning Scale

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### ABSTRACT

E-learning is a novel approach to education that allows people to learn about any subject from the convenience of their homes using online communication tools. Mobile devices, tablets, computers, laptops, etc. are required for both the instructor and the student. The revolution in information communication made it closer amongst nations. This revolution had an impact on schooling. Thanks to internet technology, we can now learn from the top academics in the world while sitting in the comfort of our own homes. We can instantly access information from anywhere in the world. Through e-learning, a teacher can teach their students from anywhere in the world while maintaining the highest level of quality. Today, there is a great need for E-Learning scale to know the online capability of teachers and students. This scale will greatly impact the teaching of students and teachers. E-Learning literature related to prominent teacher educators and distance education specialists at the level of difficulty were consulted before the dimensions became sophisticated. This scale is for the English and Hindi medium scholars. Five dimensions and sixty statements were kept in the E-Learning scale. Content validity and face validity of the scale was determined by discussing with e-learning experts, education experts and distance education experts. The reliability of the scale was determined by Split half-method and test-retest method which was obtained respectively as 0.90 and 0.88. Z-scores were used to interpret the results of the scale.

**Keywords:** *Time E-Learning, Reliability, Validity*

Online education is a new education method in which knowledge on any subject can be obtained from home by sitting at home using communication tools through internet. For this, both teacher and learner must have mobile or tablet, computer, laptop etc. In the era of modern globalization and globalization, the nature of education has also changed, the revolution of information communication has reduced the geographical distance. Whose effect was seen in the world of education, now we can sit at home and take education from any of the best scholars of the country and abroad through internet technology and can get information about the whole world. By using this we can get the information immediately. Through online education, a teacher can provide the best education to his students sitting in any corner of the world. This is a positive step in the field of higher education. In 2019, when the corona pandemic confined people all over the world to their homes, online education proved to be a boon in the education world. Online education, which was till now limited to the students of technical institutes, proved to be a

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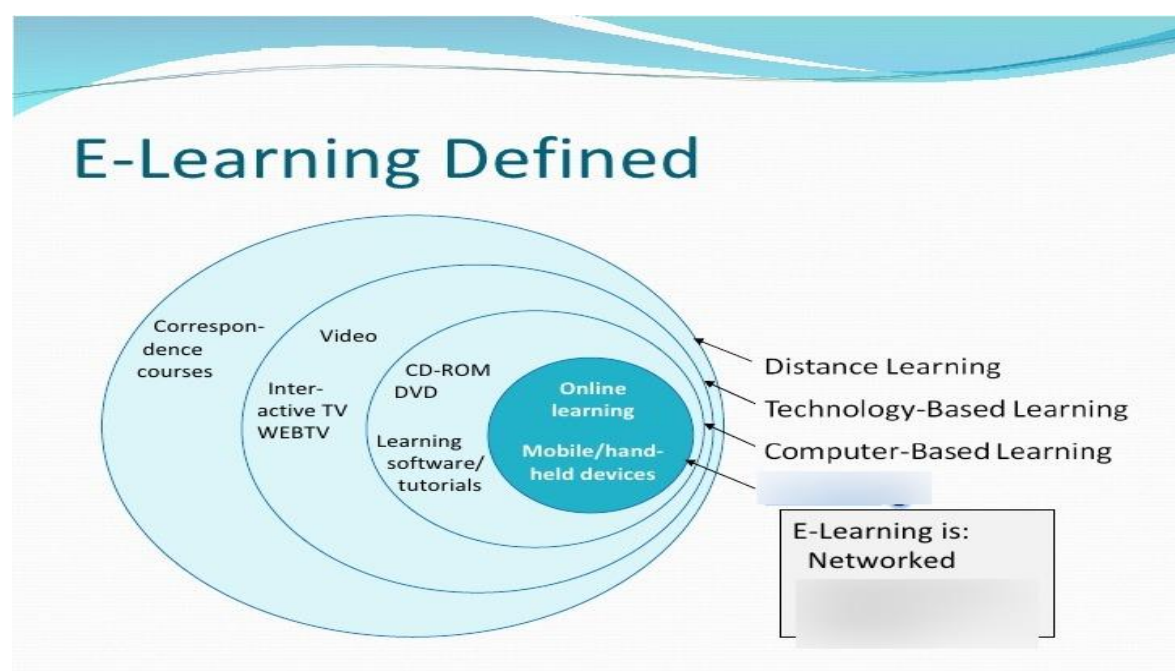
boon for everyone from primary level to higher level. For this the words e-education, virtual education, distance education, digital education etc. can be used.

All online education is not just a technology, it is a new process of socialization, through which the policies and intentions of the government and policy makers can be understood and it needs to be seen in the same form. It is one thing to use technology for education by maintaining physical distance in Corona crisis, anyway, along with the development of technology, it has been used in education as well. It is also necessary to have this.

The way we have gone digital in our personal lives was not possible earlier. Were our banking, our markets, our catering, the process of paying all kinds of bills, ticketing and traveling arrangements ever online? But time has made everything possible. Today ATM is necessity and online ticketing reality. All our needs are going online today. In such a situation, it is not unnecessary to say that online media has opened new doors of possibilities. This corona crisis has strengthened the medium of online education.

There cannot be an alternative, because learning something in the presence of a teacher and learning something in his virtual presence are two different situations. It is possible that our practice is of physical classes and our mind and mind is not ready to accept that online classes can also be successful. The conditioning of the mind is such that we are not ready to give that importance to virtual classes. Which gives real classes. Nevertheless, it has to be admitted that today the virtual world is defeating the real world in all fields.

In today's digital environment, no aspect of the society has remained untouched by the online process. In such a situation, virtual classroom (online) has been the medium of classroom teaching in education during the Corona epidemic. In such a situation, there seems to be a need to measure online (e-learning) what information the student has about e-learning, e-adjustment, his/her interest, ignorance about e-learning (lack of information), importance of e-learning and limitations of e-learning. Presented e-learning scale has been constructed for measurement.



(Resource by google.com)

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### *Objectives of E-Learning:*

The following objectives are achieved by E-Learning-

- Providing equal opportunity for education to all through E-Learning.
- Providing an opportunity to learn freely through E-Learning.
- Communicating and Communicating Curriculum Through E-Learning
- Promotion of mixed media through E-Learning
- Management of education process through E-Learning in open universities
- Promotion of online education through E-Learning
- Through E-Learning, students can get the same quality learning material
- Through E-Learning, students can learn according to their mental level, skill, interest, local needs and resources.

### *Technologies used in E- Learning:*

Learning is also called blended learning, in which the following techniques are used,

- E-mail and mobile learning
- internet
- website
- web -based instructional material multimedia CD- ROM
- learning managed software
- roll- playing
- computer Aided Assessment
- virtual class room
- games

### *Dimension of E-Learning Scale*

1. **E-Learning Awareness Regarding-** Awareness regarding E-Learning-Emphasis has been laid on the need to make students aware of new online technology and knowledge of various tools of e-learning like-, laptop, tablet, computer, e-mail etc.
2. **Interest in E-Learning-** Interest of E- Learning-E-Learning is advanced learning technology. Technology and learning methods are used in E-Learning. For this reason, the interest of students is increasing in E-learning.
3. **Ignorance about e-learning-** E-learning is a new concept in education. Under this, internet technology is used in the presentation and communication of the curriculum. Today many people are ignorance online education.
4. **Importance of E- Learning-** On the online platform, students can easily understand the difficult topics, review their syllabus repeatedly, and keep themselves updated with the information.
5. **Limitation of E-learning-** E-Learning creates a situation of lack communication between teachers and students. This system leads to a huge digital divide between rich and poor people in the country.

### *Development of E- Learning Scale:*

For measuring E-learning Likert five-point scales were adopted advanced to degree numerous components of the E-learning scale. The scale is distributed with normal curve distributions with respect to end points highest positive and negative distributions. Five alternatives for which solution had been decided are Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree, respectively. The E-Learning literature associated with eminent teacher educators and distance education specialists at the difficulty had been consulted earlier than the dimensions became advanced. The scale is for use on the scholars

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of both English and Hindi medium. So, retaining in view the occasions of various institutions. The scale became organized in each the languages. Content validity and face validity was established/checked against each items. Initially, a ninty eight (98) statements had been organized retaining in thoughts the character and situations of secondary, graduate, and P.G. students within side the scale. In this scale, a total of 5 components focused on 1) Awareness Regarding E-learning 2) Interest in E-Learning 3) Ignorance about E-learning 4) Importance of E-learning and 5) Limitations of E-learning had been included. With the involvement of 15 eminent teacher educators and distance education specialists, out of 98(ninty eight) developed statements as draft finally 76(seventy-six) statements had been determined appropriate for measurement. The scale was finalized with 60 (sixty) items out of 76 (seventy-six) determined appropriate statements after establishing reliability and validity. The procedure for calculation of reliability and validity with values are given below.

### ***Validity of the Scale***

The list of 98 items was administered on 400 students of age 13-24 years. High and low group formulated on the basis of obtained score of the subjects to compare the response of two groups in respect of each item t-test was applied. The range of significant level being was established within 0.05 and 0.01. The value of 60 items was found more than table value 1.67 and 2.66 with  $df = 52$ . The items which were insignificant was excluded and finally 60 items were selected for the E-Learning scale.

The final draft of lifestyle scale, which is given in the following tables

***Table-1 Total numbers of selected statement***

<b>S. No.</b>	<b>Dimension of E-Learning Scale</b>	<b>Types of Items</b>	<b>Sr. No. of Items</b>	<b>Total Items</b>
<b>1.</b>	<b>E-Learning Awareness Regarding</b>	Positive Items	4,6,17,21,22,26,31,36,42,45,50	13
		Negative Items	11,55	
<b>2.</b>	<b>Interest in E-Learning</b>	Positive Items	12,16,23,27,32,37,41,54,58	12
		Negative Items	3,7,49	
<b>3.</b>	<b>Ignorance about E-Learning</b>	Positive Items	8,33,48	09
		Negative Items	1,13,18,28,40,53	
<b>4.</b>	<b>Importance of E-Learning</b>	Positive Items	2,9,14,19,20,29,34,43,47,51,56,59	14
		Negative Items	25,38	
<b>5.</b>	<b>Limitations of E-Learning</b>	Positive Items	10,24,30,35,44	12
		Negative Items	5,15,39,46,52,57,60	
<b>Total</b>				<b>60</b>

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### Reliability of the Scale:

Reliability of the scale was determined by Split- Half method. The test was first divide into two equivalent halves, and the correlation calculated for these half test. From the reliability of the half test, the self-correlation of the whole test was calculated by using Spearman Brown Prophecy formula. Test-Rest method also showed high reliability which is given in the following tables.

**Table-1 Reliability of the test by Split-Half Method**

Version of the form	N	R	Index of Reliability
English version	100	.82	.90
Hindi Version	100	.79	.88

**Table-2 Reliability of the Test by Test-Retest Method**

Version of the form	N	R	Index of Reliability
English Version	100	.78	.88
Hindi Version	100	.76	.86

### Administration of E-Learning Scale

The present Lifestyle scale is a self-administered scale and can be used for groups of any reasonable size. There was no time limit but students took about 45 minutes. Before going to the statements, the subject is required to fill the general information in the space provided in answer sheet. The standard instruction is printed both in Hindi and English on the front page of the test booklet.

### Scoring Procedure:

the positive and negative statements along with their weightage are show in the below table.

**Table-3 Scoring Key**

Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Positive	5	4	3	2	1
Negative	1	2	3	4	5

### Statistical Results of the Scale:

Statistical Result have been given below-**Table-4**

**Table-4 Statical Result for E-Learning Scale**

N	MEAN	S.D.	SCORE RANGE
400	223.50	22.53	60-300

### Norms:

On the basis of the statistical result presented in Table-4, the Z-score Norms have been presented in Table-5.

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**Table-5 Z-Score Norms For E-Learning Scale**

Mean: 223.50

S.D: 22.53

N: 400

RAW SCORE	Z-SCORE	RAW SCORE	Z-SCORE	RAW SCORE	Z-SCORE	RAW SCORE	Z-SCORE
201	-1.00	226	+0.11	251	+1.22	276	+2.33
202	-0.95	227	+0.16	252	+1.26	277	+2.38
203	-0.91	228	+0.20	253	+1.31	278	+2.42
204	-0.87	229	+0.24	254	+1.35	279	+2.46
205	-0.82	230	+0.29	255	+1.40	280	+2.51
206	-0.78	231	+0.33	256	+1.44	281	+2.55
207	-0.73	232	+0.38	257	+1.49	282	+2.60
208	-0.69	233	+0.42	258	+1.53	283	+2.64
209	-0.64	234	+0.47	259	+1.58	284	+2.69
210	-0.60	235	+0.51	260	+1.62	285	+2.73
211	-0.55	236	+0.55	261	+1.66	286	+2.78
212	-0.51	237	+0.60	262	+1.71	287	+2.82
213	-0.47	238	+0.64	263	+1.75	288	+2.86
214	-0.42	239	+0.69	264	+1.80	289	+2.91
215	-0.38	240	+0.73	265	+1.84	290	+2.95
216	-0.33	241	+0.78	266	+1.89	291	+2.99
217	-0.29	242	+0.82	267	+1.93	292	+3.04
218	-0.24	243	+0.87	268	+1.98	293	+3.08
219	-0.20	244	+0.91	269	+2.02	294	+3.13
220	-0.16	245	+0.95	270	+2.07	295	+3.17
221	-0.11	246	+1.00	271	+2.11	296	+3.22
222	-0.07	247	+1.04	272	+2.15	297	+3.26
223	-0.02	248	+1.09	273	+2.20	298	+3.31
224	+0.02	249	+1.13	274	+2.24	299	+3.35
225	+0.07	250	+1.18	275	+2.29	300	+3.40

### *Interpretation*

Norms for interpretation, which is given in the following table.

**Table-6 Norms for interpretation of the level of E-Learning Scale**

S.NO.	Range of Z-Scores	Grade	Level of E-Learning
1	+2.01 and above	A	Extremely High E-Learning
2	+1.26 to +2.00	B	High E-Learning
3	+0.51 to +1.25	C	Above Average E-Learning
4	-0.50 to +0.50	D	Average E-Learning
5	-0.51 to -1.25	E	Below Average E-Learning
6	-1.26 to -2.00	F	Low E-Learning
7	-2.01 and below	G	Extremely Low E-Learning

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### ***Acknowledgment***

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### ***Conflict of Interest***

The author(s) declared no conflict of interest.

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