Original Research Paper

Education

CONSTRUCTION AND VALIDATION OF A SCALE FOR MEASURING LEARNING MANAGEMENT SYSTEM (LMS) AWARENESS

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ABSTRACT The present study is an attempt to construct and validate a scale for assessing the awareness of Learning Management System. A pilot study among one hundred teachers including fifty male and fifty female teachers from various schools was conducted in Namakkal District to establish reliability and validity of the scale. The Mean, Median and S.D value of the scale are 139.38, 136.41, and 6.57 respectively. The distribution seems to be slightly positively skewed. Content validity was established by getting the opinions of the experts and scholars in the field of education. Percentile norms of the scale was also planned well to apprise the scores of awareness of Learning Management System. The tool contains thirty items including twenty five positive items and five negative items. The minimum score of the scale is thirty and maximum score is one hundred and fifty.

KEYWORDS : Learning Management System, teachers, development of scale, validity

INTRODUCTION
A Learning Management System (LMS) is a software application for the administration, documentation, tracking, reporting and delivery of educational courses or training programs.

Learning management systems help the instructor deliver 1 Material to the students, 2. Administer tests and other assignments, 3. Track student progress, 4. Manage record-keeping. LMSs are focused on online learning delivery but support a range of uses, acting as a platform for fully online courses, as well as several hybrid forms, such as blended learning and flipped classrooms. LMSs can be complemented by other learning technologies such as a training management system to manage instructor-led training or a Learning Record Store to store and track learning data (Eastmond D., and Ziegahn,L.2001**).** Based on the review of related literature it has been found that only very few tools are available to measure the LMS and most of the tools are prepared by the overseas authors. Hence, an attempt has been made to construct and validate an indigenous scale to measure LMS.

SELECTION OF ITEMS
The items of learning management system awareness scale (LMSAS) have been selected on the basis of the factors influencing the use of learning management system which include usage of learning management system, importance of learning management system in education. For the selection of items, a number of standard inventories, questionnaires and books have been referred. The Virtual Learning Environment Scale (VLES) developed and standardized by S.SaiSandhiya and P.Sivakumar was referred for development of the present scale. The opinion of the experts was also sought out for the selection of items. Finally, items were modified and framed which were found suitable for assessing the awareness on learning management system (Berge,Z.L and Collins 2003).

The following points have been considered while selecting the items:
1) It was found desirable to include more items in preliminary form of test.
2) Repetition or overlapping of items was avoided.
3) Items were framed in a simple and explicit language to avoid any misunderstanding.
4) Statements were set against five point scale namely strongly disagree, disagree, neutral, agree, and strongly agree.

PRELIMINARY FORM
The present tool is designed by the investigators which consists of thirty statements and two sections. The section A includes a question to test the previous knowledge of Learning Management System (LMS) of teachers and section B includes the statements to measure the awareness of teachers about LMS. The items were developed in a simple language so that the teachers who selected as sample can understand and grasp the meaning easily. As the instructions to the samples were to be general, detailed and explicit, they were provided in a clear manner.

TRYOUT OF LMSAS
The preliminary study of the learning management system awareness scale (LMSAS) was conducted to a randomly selected one hundred teachers including fifty digital natives (Teachers who use digital technology in the class room) and fifty digital immigrant (Teachers who were born before the wide spread adoption of digital technology) of ten high / higher secondary schools of Namakkal District in the state of Tamilnadu.

Administration of LMSAS Scale
The tools were distributed to one hundred teachers working in high/higher secondary high schools in Namakkal District. They were asked to fill up the details of gender, locality, age, educational qualification, professional qualification, designation etc. printed on the front page. The teachers were requested to read the instructions carefully before giving their responses, realizing its importance in academic area. After the teachers read out instructions, their suggestions and doubts were discussed. The teachers were then requested to turn the page and to begin answering the items. No time limit was imposed, ordinarily not more than 20 to 25 minutes were required for all samples to complete the tool.

Scoring Procedure of LMSAS Scale
The statements in the scale were set against at a five point scale viz., strongly disagree, disagree, neutral, agree, and strongly agree. The scale consists of twenty five positive items and five negative items. The scores for positive statements were 1, 2, 3, 4, and 5 respectively and for negative statements vice versa. The sum of scores shows the degree of awareness of learning management system. The maximum score of the scale was one hundred and fifty and the minimum was thirty.

RESULTS
The calculated value of Mean, Median and S.D are furnished in the Table no.1

Table 1 Mean, Median and S.D values

Mean	Median	S.D
139.38	136.41	6.57

From Table No.1 it is found that the value of mean and median are very near to each other and it is concluded that the distribution of data is perfectly normal.

Table: 2 Skewness , Kurtosis and S.E (N=100)

	Value	S.E	Remarks
Skewness	0.74	0.171	NS
Kurtosis	0.214	0.063	NS

Since the S. E. of skewness and kurtosis are less than ± 1.96, at 5 % level of Confidence, it is interpreted that the sample does not differ from normality.

Reliability of the LMSAS Scale

For estimation the reliability of the learning management system awareness scale (LMSAS), the test was administered on the 100 subjects in each category, twice with an interval of twenty five days and the coefficient of correlation was computed between the 1st set of scores and second sets of scores. Reliability refers to the consistency with which a test measures. The concept of reliability suggests both stability and consistency of measurement. The reliability of the LMSAS Scale was found to be 0.82 by test-retest method.

Validity of the LMSAS Scale

Content validity of the scale was ascertained by the selection of items and the agreement of the judge's opinion on the content of items was accepted as a true measure of Learning Management system. Content validity is non-statistical. The opinion of the experts was taken into consideration in acceptance of which statements increased its content validity.

Percentile Norm for the LMSAS Scale

The investigators of the present study framed the percentile norm in respect of the entire sample.

Table -3 Showing the Norm for Learning Management System Awareness Scale (LMSAS)

Score	Percentile	Norm
Upto 75 out of 150	Upto 50%	**Unfavorable Learning Management System Awareness**
Above 75 0ut of 150	Upto 50%	**Favorable Learning Management System Awareness**

CONCLUSION

Thus, the present tool is designed by the investigators which consists of 30 statements under two sections. The section A includes a question to test the previous knowledge of Learning Management System (LMS) of teachers and section B includes the statements to measure the awareness of sample about LMS. The items were developed in a simple language and the teachers who were selected as samples can understand and grasp the meaning easily. As the instructions to the teachers were to be general, detailed and explicit, they were provided in a clear manner. Thus the present tool is a standardized one with the required reliability, content validity and consistency in the statements. Hence, it can be used by any researcher to measure the awareness of teachers on LMS in the present educational and technological scenario.

LEARNING MANAGEMENT SYSTEM
Please read the following statements and tick the box which you think that suits your opinion best.

SECTION A: USAGE OF LMS
Have you used any Learning Management System before?
YES ☐1 NO ☐2

If yes, what is the name of the Learning Management System you have use?
Moodle ☐1 Ilias ☐2 Sakai ☐3 A Tutor ☐4 Others ☐5

SECTION B: AWARENESS OF LEARNING MANAGEMENT SYSTEM

S.No	STATEMENTS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree.
1	Learning Management System useful for teaching and learning.					
2	Using Learning Management System enables me to accomplish my activities better.					
3	Learning Management System is compatible with common browsers on common hardware (pcs, mobile devices, tablets etc.)					
4	It is necessary to undergo training to be familiar with the Administrative tools of LMS					
5	People who influence my behavior think that I should use Learning Management System in the classroom.					
6	In general, the Education Department has supported the use of Learning Management System.					
7	The system makes collaboration with students more interesting					
8	I must use Learning Management System thoroughly.					
9	I don't have the sufficient knowledge necessary to use Learning Management System					
10	Learning Management System is compatible with other systems I use.					
11	Having used Learning Management System, I would recommend my colleagues to use it for study purposes					
12	The cost of acquiring and maintaining Learning Management System is very cheap					
13	Uploading and Downloading materials were found to be easy					
14	Learning Management System enhances face to face teaching.					
15	Learning Management System do not contain irrelevant information, which could distract users					
16	The interface of LMS looks good					
17	The software of LMS prevents unauthorized access					
18	I can get timely feedbacks from students through LMS.					

19	The Learning Management System provides features to assess learners' interests.					
20	My institution holds training (workshop) for students and lecturers on eLearning					
21	I intend to use E-Books, E-journals in Digital library in teaching learning system.					
22	It is difficult to learn through LMS and one can trouble shoot the hardware and software problems with difficulty only.					
23	Teaching- learning process through LMS is easy.					
24	I intend to use internet to communicate with my students to exchange study materials which are prepared by me.					
25	LMS mostly disturbs group interactive Learning.					
26	Using LMS as a tool for instruction is not an easy task.					
27	Most of the time I access internet at school library using LMS facility.					
28	The workload of the Teacher is enough lessened, due to the digitalization of all the works related to 1. Delivery of the material 2. Administrating the test 3. Managing the Records.					
29	Mostly my students find benefit when they make assignments through LMS.					
30	Always I instruct my students to use internet resources while studying along with LMS software as it helps me to monitor their work easily.					

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