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STANDERDISATION OF LEARNING MANAGEMENT ACCEPTANCE TOOL USING TECHNOLOGICAL ACCEPTANCE MODEL(TAM)

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Abstract

The purpose of the research paper is to construct and standardize the tool on Learning Management system Acceptance (LMSA). This LMSA tool had developed on the basis of Technology Acceptance Model (TAM) to elicit responses about teaching using technological learning with relationships between the variables of perceived usefulness, perceived ease of use, behavirol intention and Actual use are measured by college students in higher education. The researcher has been established 38 statements with likert type (four point scale) and the sample was collected from 68 college students which are used technology for learning in their institutions in Salem district. The item analysis was done. After finalizing the item analysis, the researcher prepared the final form of the scale contains 32 statements. This scale would be much applicable to evaluate the effectiveness of LMS online learning for educational achievement.

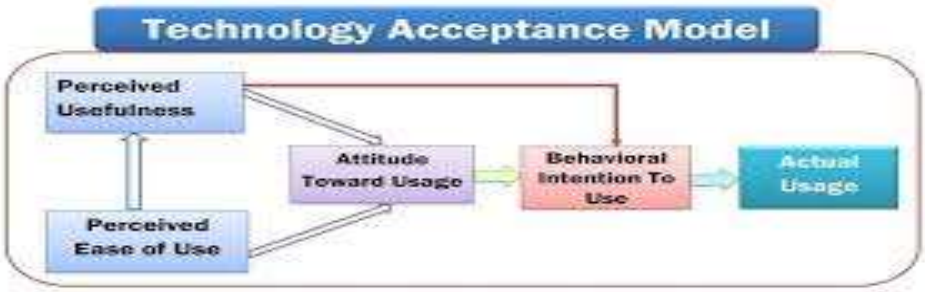
Keywords: Standardization, Technology Acceptance Model(TAM), Learning Management System acceptance tool (LMSA)

Introduction

The development of information technologies has led to the acquisition of new applications in the field of education (smith et al., 2019). The technology of education refers to the enhance teaching, learning and educational management. It involves the integration of devices, software, digital content, and platforms-such as Learning Management Systems (LMS), interactive video classes online assessments and virtual classrooms to create engaging and flexible learning environments. From this conclusion the digital learning of LMS can be defined as "a self-contained webpage with embedded instructional tools that permit faculty to organize academic content and engage students in their learning" (Gautreau et al., 2013). More including computer internet technologies in the learning and assessing processes for students and by offering multiple teaching learning tools, LMSs provide virtual way of increased and faster communications among students and teachers and offer speed and effectiveness in educational processes (Shannon & Ross,2015) The utilization of LMSs to aid in educational initiatives has become widespread among college institutions and universities over the years (Walker et al., 2016). Learning management systems are open software platforms that provide multiple variety of integrated tools for delivering content and managing online course instruction. Whether open source (e.g., Moodle, Sakai) or commercial (e.g., Blackboard, Brightspace D2L), most LMSs are flexible, easy to use, accessible and user-friendly (Kasim & Khalid, 2016).

Technology acceptance model (TAM)

The Technology Acceptance Model (TAM) has been utilized in research investigation to explore the acceptance of new e-software technology or new e-app services (Davis, 1989, Davis and Venkatesh, 1996). TAM is only the effective contributions of Ajzen and Fishbein's theory of reasoned action (TRA). Davis's technology acceptance model (Davis, 1989, Davis et al., 1989) is the most widely utilized models of acceptance and usage of innovated technology by users. The TAM model assumes that when someone is introduced to a new technology, his or her decision to use it will be influenced by a number of factors. Primarily, TAM is constrcted by the following of four pillers: perceived ease of use (PEOU), perceived usefulness (PU),Behavioral intention (BI) and actual use (AU)



Technology Acceptance Model (TAM) By Davis (1989)

The TAM survey is analysed to expose the responses about teaching and learning using the online open software of LMS. The relationships between the variables of perceived usefulness, perceived ease of use, and intention to use are measured by the TAM questionnaire. (Radif et al., 2016)

OBJECTIVE OF THE STUDY

The aim of this study is to construct and standardise the 'Learning Management System Acceptance tool' to analyse the acceptance usage of technology in their classroom learning and enhance their academic achievement.

CONSTRUCTION OF THE TOOL

For the construction of the tool, the researcher referred and analysed that the following secondary sources such as previous articles, books and e-journals. This LMSA tool has been constructed with 38 statements based on the Technology acceptance model. The LMSA tool is composed the following four constructs such as perceived ease of use (PEOU), perceived usefulness (PU), Behavioral intention (BI) and actual use (AU). For the pilot study, the researcher had approached 68 science students who were studied in the Arts and Science college in Salem district. The sample was selected based on random sampling technique. The investigator distributed the tool (hard copy) to respondents and systematically collected the data. The prepared tool has been submitted to the professors who are working in the Arts and Science college for getting expert guidance. Based on their suggestions, corrections were done in the prepared tool. Thus, the validity of the tool was established.

ITEM ANALYSIS PROCEDURE

Item analysis is a statistical technique used to evaluate the quality and effectiveness of individual test questions or items on a test. It involves analysing the outcomes of each item to determine its difficulty level, discrimination power, validity and reliability. The questionnaire has constructs 38 items and collected from 68 science students. The internal consistency is a reliability assessment method to measure the internal relationship among each item of the scale.

The following formula can compute the Cronbach's alpha value

$$\propto = \left(\frac{k}{k-1}\right)\left(1 - \frac{\sum_{i=1}^{k}\sigma_{y_i}^2}{\sigma_x^2}\right)$$

where

- k = Total Number of Scale Items.
- $\sigma_{y_i}^2$ = Variance related to item i and
- σ_x^2 = Variance associated with the observed total scores

Table No.: 1
ALPHA VALUE FOR BEFORE THE ITEM ANALYSIS

Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	Number of Items
0.942	0.945	38

From the Alpha value analysis for Cronbach's alpha reliability value, the investigator interpreted that a high level of internal consistency occurred among the items of scale based on the alpha value was **0.942.**

Table No.: 02

DISTRIBUTION OF THE SELECTED AND NOT SELECTED ITEMS

Number of Statement	Mean if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Remarks
S1	286.248	0.608	0.942	Selected
S2	303.685	0.121	0.948	Not selected
S3	300.675	0.284	0.946	Not Selected
S4	298.672	0.438	0.945	Selected
S5	298.823	0.327	0.946	Selected
S6	286.248	0.608	0.942	Selected
S7	298.672	0.438	0.945	Selected
S8	295.598	0.595	0.944	Selected
S9	286.248	0.608	0.942	Selected
S10	298.823	0.327	0.946	Selected
S11	286.248	0.608	0.942	Selected
S12	286.248	0.608	0.942	Selected
S13	301.538	0.232	0.947	Not selected
S14	300.675	0.284	0.946	Not Selected
S15	286.210	0.795	0.942	Selected
S16	301.560	0.209	0.947	Not selected
S17	287.149	0.755	0.943	Selected
S18	295.598	0.595	0.944	Selected
S19	286.248	0.608	0.942	Selected
S20	294.970	0.423	0.945	Selected
S21	287.404	0.733	0.943	Selected
S22	286.248	0.608	0.942	Selected
S23	286.694	0.751	0.943	Selected
S24	298.823	0.327	0.946	Selected
S25	295.598	0.595	0.944	Selected
S26	299.219	0.384	0.945	Selected
S27	296.923	0.413	0.945	Selected
S28	286.248	0.608	0.942	Selected
S29	293.477	0.460	0.945	Selected
S30	301.560	0.209	0.947	Not Selected
S31	286.248	0.608	0.942	Selected
S32	286.248	0.608	0.942	Selected
S33	296.522	0.505	0.945	Selected
S34	294.388	0.440	0.945	Selected
S35	297.116	0.417	0.945	Selected
S36	286.248	0.608	0.942	Selected
S37	292.523	0.666	0.943	Selected
S38	298.823	0.327	0.946	Selected

The above table of the column shows the value that Cronbach's Alpha would be if that particular item was deleted from the scale. The item statements S2, S3, S13,S14,S16and S30 would influence result in a lower Cronbach's Alpha. Therefore, the investigator decided to remove the statements S2, S3, S13,S14,S16 and S30. After analysing and finalizing the item analysis strategies the investigator prepared the final

draft of the tool. Out of the 38 items, only32 items were to be selected for the final draft of the tool. Therefore the final draft of the tool consists of thirty two items in a four point scale

B. Split Half Method of Reliability: The investigator has also attempted a split-half method to establish the reliability of the tools. The split-half method assesses the internal consistency, such as psychometric tests and questionnaires (Jaggi, 2012). The split half method measures the reliability of a tool in which all the tool parts equally contribute to what is being measured. The investigator may divide the tools into two equal half in the split-half method and compare the two equal half using the Spearman-Brown formula. The high value of the correlation value replies to the high level of reliability of the tool. In this present study, the investigator divided the 32 items statements into two half based on odd and even items. Based on the respondent's odd and even items' responses, the investigator has employed the Spearman-Brown calculation. The value of the LMSA tool is 0.929 in the spearman Brown Calculation. In this way, the investigator established the reliability of the instrument once again.

Conclusion

Learning Management system includes several tools that provide academic and training institutions efficient and effective means to support supplement their traditional way of teaching. The success of LMSA tool in any institution starts by instructors' acceptance, which in turns initiates and promotes learners' utilization of LMS (Al-Busaidi & Al-Shihi,2010). Based on the study's objectives, the investigator wished to develop a four-point rating scale to measure the level of Learners acceptance performance in LMS. The item analysis was done through 'Cronbach's Alpha if Item Deleted' calculation with the use of SPSS 22 Version. After finalizing the item analysis strategies, the investigator prepared the final draft of the tool consists of thirty-two items on a four-point scale. The tool's reliability has established by Cronbach's alpha (0.942) and Split Half (0.929) techniques. The reliability of both techniques described the high level of internal consistency of the tool; similarly, the tool established the tool's validity with the content validity method. Hence, from the item analysis, reliability, and validity, the tool is useful to measure teacher educators' stress while using technology in their teaching and learning process. It can be utilized and extended for further research in the same field.

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