

Research for University of Belize:

Students Perception And Evaluation Of Moodle Learning Management System

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Abstract

Learning management systems (LMSs) is a software application designed specifically for online learning. Research has proven that it is mostly used in higher education. There is diverse research conducted on LMSs that has been technologically based rather than to adoption. Task technology fit is a method that evaluates the effectiveness of technology in the system by acquiring the relationship between the technology and the task the technology aims to support. The purpose of this research paper is to utilize the technology performance chain as a framework to acknowledge the question of how task technology fit influences the performance impacts of LMSs. The results contributed the importance of task technology fit, which had a positive impact on learning both synchronous and asynchronous. Even though task technology fit had a positive influence in learning the only febleness was on the outcome terms of the grades. Students showed acceptance towards the utilization of Moodle LMS at the University, but it also provided information that the idea of a different LMS was also considered by students. The Impacts of Moodle and its user-friendly feature was highly rated by students of the University.

Key words: Moodle, Learning Management Systems, Perception, task technology fit

Introduction

The evolution in information technology and computers has positive impacts in the education industry. Learning Management Systems is a software that is designed specifically to create, distribute, and manage the delivery of educational content (Kate Brush 2019). Learning Management Systems originated in 1924 when Sidney Pressey invented the first 'teaching machine'. This resembled a typewriter with a window that could administer questions. One window was used to show the question and the other one to fill in the answer (Easy Lmss July 8, 2020). LMSs have become increasingly useful over the past few years and it has changed the course of teaching and learning practices. Currently, the number of LMS users is estimated at 73.8 million (Imed Bouchrika September 2020). Now higher education and universities have explored new creative ways on how to deliver educational resources.

Last year March 20, 2020 schools in Belize were closed due to the COVID-19 pandemic. Eventually, due to the increase of COVID-19 cases in Belize, restrictions were placed for traveling. These restrictions included Belizeans studying abroad (Yvonne Casildo Flowers April 2020). Schools decided to open the horizon for distance learning. Each school used different types of distance learning, it all depended on the institution system and the target users. However, higher education level institutions had a common goal, which was to enable distance learning for students that they could access anywhere and at any time. Higher education level had to open their horizon for a friendly user whereby the sharing of knowledge is available between instructors and users.

The purpose of this research paper is to utilize the technology performance chain as a framework to acknowledge the question of how task technology fit influences the performance impacts of LMSs. We claim that the learning management system (LMSs) is a useful and user-friendly learning tool based on our research outcome conducted at the University of Belize.

Goal of the Research

The goal of the research is to assess student's perception and evaluation of the LMS- Moodle as it pertains to their online education at University of Belize. Evaluation of Moodle will give an insight to what students consider satisfactory and efficient. To verify if the Learning Management system is aiding students in their education and define if the impact of e-learning with Moodle is positive or negative.

Objective of the Research

The objective of the Research is to provide information that will be beneficial to The University of Belize. This will assist in determining if the Moodle is the most efficient and reliable platform for e-learning at the University. This research will also provide data in terms of students analysis of Moodle, depicting a clear and concise picture of how they perceive and evaluate the LMS.

Literature Review

Learning Management System (Moodle)

Technology is changing the world each passing day, universities have invested in modern technology and information systems to improve productivity and to assist in the delivery of lessons. Due to the spread of the Covid pandemic universities all over the world were challenged and forced to implement an e-learning system as their method for educating students to remain open and stay competitive. Both educators and students had to adopt and learn to use the LMS way of learning. Pass research has shown that the quality of information has a strong significant influence on Information System (IS) success, system designers should make full use of the completeness; understandability; security; availability; and accuracy of information to increase behavioral intention and user satisfaction to use IS (Abdel Nasser H. Zaied, 2005). Therefore, if students are pleased with the efficiency and security of the Learning Management System (LMS) they will be most comfortable using and adopting it. Students find this way of learning to be most effective, and successful as compared to face to face learning.

There are basically four types of e-learning systems: The Learning Management System (LMS), Learning Content Management System (LCMS), Learning Design System (LDS), and Learning Support System (LSS) (Nor Azura Adzharuddin, et al 2013). In this research we will be focused on LMS, this research that is based on students' perception of Moodle (LMS) at the University of Belize. LMS is a web-based technology which assists in the planning, distribution, and evaluation of a specific learning process. It is a software environment designed to manage user learning interventions as well as deliver learning content and resources to students (Ayub, Rohani, Wan Marzuki, Wan Zah and Wong [18]).

There are different types of LMS, some of them represent open-source solutions such as Moodle. Several studies revealed the existence of strong advantages of using e-learning platforms, but their adoption involves some challenges to the institutions.

The Moodle platform is one of the most widely used e-learning systems at the Universities in Belize. It enables the creation of a course website, ensuring their access only to enrolled students at the University of Belize. Several studies (e.g., Bernard et al., 2014; chigeza and Halbert, 2014; Gonzalez-Gomez et al., 2016) have compared face to face teaching methods to online learning in order to define which of the formats provide for example: the highest learning outcome, creates the most satisfied students or ease of use for lecturers. The moodle LMS platform allows the exchange of information among users geographically dispersed, through mechanisms of synchronous and asynchronous communication. Brandon Hall Group in 2016 conducted a research that revealed that about 44% of the companies using an LMS were thinking of replacing them with ones that could provide them with a better user experience. It is imperative for an LMS to have a user-friendly interface with self-descriptive navigation features, The LMS Moodle provides these requirements. It is very easy to use, which in return requires minimal investment of time in training to learn the system and use it efficiently.

Task Technology Fit

Researchers have found that in order to gain further understanding of the factors that influence learning outcomes in a LMS environment, it may be useful to conduct research within the context of models that have shown promise in predicting information systems success. Goodhue and Thompson's (1995) technology-to-performance chain (TPC) is one such model. Below is a diagram of Goodhue and Thompson 1995 model that illustrates what they developed to help users and organizations to have an in-depth understanding and make the use of IT. The TPC combines insights from research on user attitudes as predictors of use ("utilization" in the TPC) with the notion of task-technology fits as a predictor of performance. The basic argument states that for technology to have a positive impact on individual performance, the technology must fit with the tasks it is supposed to support, and it must be used. The impact of task-technology fit has been investigated using parts of the TPC in various domains. Goodhue and Thompson (1995) initially tested a subset of the model using participants from a transport company and an insurance company, and found strong support for the influence of task-technology fit on performance as well some support for the influence of system characteristics and task characteristics on task-technology fit.

E-learning Success

T.J. McGill, J.E. Klobas/Computers & Education 52 (2009) 496-508

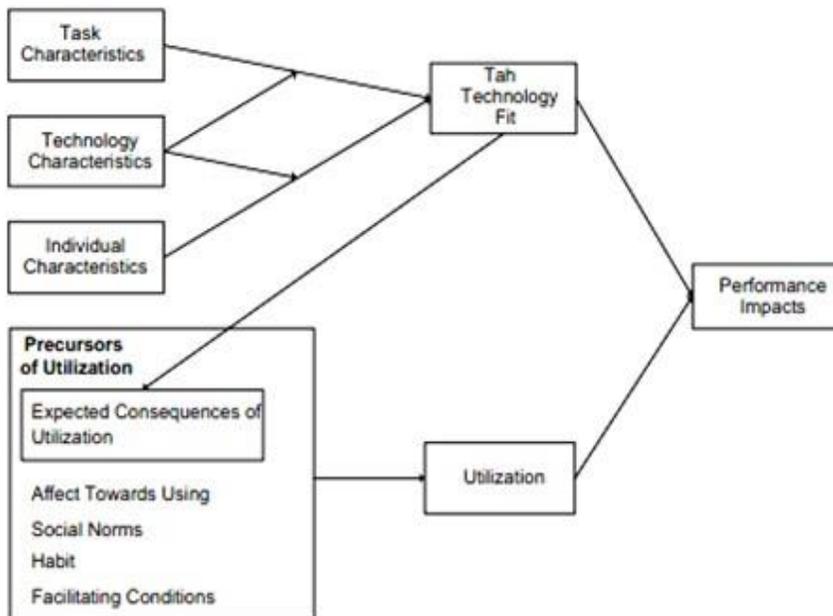


Fig. 1. The technology-to-performance chain (Goodhue and Thompson, 1995).

In this modern world where information is circulated quickly via the internet, the LMS is an essential tool for university students as they can keep updated with their coursework, while getting instant notifications pertaining to their daily assignments. In turn, lecturers have an easier time reaching out to their students out of class hours and can instantly update them over the LMS about issues regarding their coursework. Although those using the LMS might encounter some problems, it's all part and parcel of learning and using a whole new system altogether. Universities should provide proper training and guidance for students and lecturers using the LMS, as well as have a team which is always on duty to solve any problems that may arise. Nevertheless, most university students have access to their university's LMS or similar systems that help to enhance their learning process. Many have also expressed positive views about LMS, therefore proving that LMS is a necessary implementation in all universities worldwide. (Nor Azura Adzharuddin, Lee Hwei Ling 2013)

The researchers focused on how effective LMS is to students and lecturers in the delivery of lessons. This research plan to study how innovative technology such as LMS (Moodle) helps to improve the effectiveness and efficiency of the way students learn and adopt based on their perception of LMS and how they feel about their experience of LMS moodle and other forms of LMS in learning. This will allow University of Belize to obtain and structure its LMS to be safe, secure and ease of use to students. It also allows UB to observe the learning outcome and results of students with the integration of LMS. The research will focus on TCP which will be Moodle as the technology for delivery of lessons to how it impacts the performance of students. This research is geared towards improving the past research by monitoring how students felt about the changes in learning techniques. This research compares how students have adopted, and successfulness of the integration of LMS as compared to just face to face teaching, and a combination of both LMS and face to face teaching.

Methodology

Participants

Moodle has been one of the most popular Learning Management Systems used at the Tertiary Level Education Institutions in Belize and is the LMS considered in this study. The participants in this study consisted of 422 students from University of Belize who have been using Moodle as their online learning system to conduct their studies.

Procedure

The study was conducted electronically via email and WhatsApp using convenience sampling. Students were invited to participate in the study by clicking the link sent by researchers to complete the survey on the web. The survey took approximately 15 minutes to complete. The completion of the survey was voluntary, and all participants' responses were anonymous.

Measurement

The survey questionnaire consisted of the following sections:

Section 1 - Characteristics of the students in terms of: age, gender, course, degree, type of LMS utilized by University for online studies.

Section 2 & 3- Learning preferences and prior moodle use, characteristics such as: What students' preferences are when learning at the University- whether face to face or using moodle. Preferences to using The LMS moodle and to see whether any other LMS had been used for online learning. Comparison of moodle to other LMS and its benefits.

Section 4- Task-Technology fit- characteristics of Moodle in terms of: task-technology fit, compatible with online study, User friendly, accuracy of information.

Section 5 & 6- Expected consequences of LMS use and Perceived impact on learning- Does Moodle improve performance of students? How moodle makes a difference in online studies, the consequences of moodle is considered positive or negative. What impact moodle has on productivity for students. How important and valuable is moodle to students in aiding them with online studies.

Section 7- Consumerization Attitude- If consumers at the University would be able to choose another LMS- what effects would it have on online learning for students? If a new LMS was utilized what impact would it have on productivity and would it fit well in providing efficiency in learning online?

These Two Sets of Question were retrieved from the following links:

Consumerization Attitude—Perceive Fit

<https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-018-0092-3>

If my teacher could choose their own Learning Managements System...

PIF_1 ...it would fit well with learning online.

PIF_2 ...it would fit well with helping me to be efficient in learning online.

PIF_3 . it would be compatible with my online learning.

4.2 Consumerization Attitude - Expected Performance improvement

<https://core.ac.uk/reader/301360300>

If my teacher could choose their own Learning Managements System...

EPI1: ...my online learning performance would improve.

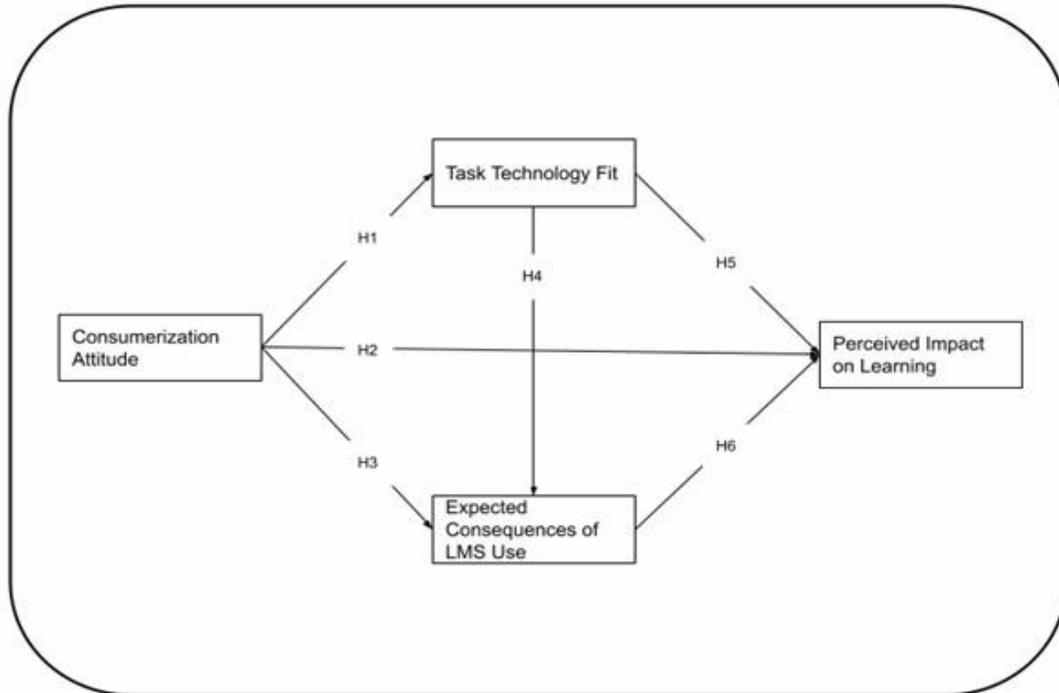
EPI2: ...my online learning productivity would improve.

EPI3: ...I would work faster while learning online.

The data collected was analysed using Google Sheet, this application gives an excellent representation and accurate results of all the data that has been entered by the researcher. It allows researchers to process data in a clear and easy form, it allows data to be manageable allowing the researchers to analyse a large set of variable data formats. The data was analysed and represented by histograms. The measurement scales for data collection of four (4) sections were measured by a seven-item scale from Bailey and Person. All the items were measured using a 7-point Likert Scale ranging from Strongly Disagree (1) to Strongly Agree (7).

Module

Consumerization Impact on Learning Management System



Hypothesis:

This survey consisted of several questions in relation to Task Technology Fit, Perceived Impact on Learning, expected consequences of LMS Use and Consumerization.

H1: Consumerization attitude will negatively influence perceived task-technology fit.

The information would be necessary to assist the University in knowing what perception students have of LMS Moodle and if they consider it to be the best option. The survey will help to illustrate how the attitude of Students towards the moodle platform impacts and influences task-technology fit.

H2: Consumerization attitude will negatively influence perceived impact on learning. Online learning can revolutionize education as it provides new opportunities for traditional learning, but how does moodle improve the quality of students' online learning. What impact does the use of the LMS moodle have on students' learning qualifications, is it beneficial in learning online at the University? Researchers aim at gathering knowledge if the moodle platform is satisfactory to the students at the University of Belize.

H3: Consumerization attitude will negatively influence expected consequences of LMS use.

This is to view how consumerization influences the consequences of LMS use. The students' attitude towards the LMS affects and influences their Productivity, this is defined as the state or quality of being

productive. This survey provides information from participants in relation to impact and perception of moodle LMS, how it aids and affects students in their online studies.

H4: Task–technology fit will have a positive influence on expected consequences of organizational LMS use. Will using LMS for online learning increase efficiency in students, will it cause a positive effect in the consequences that may occur in using LMS at the University.

H5: Task–technology fit will have a positive influence on perceived impact on learning. Researchers aim to gather information about what is the best LMS to be utilized at the University of Belize for online learning. The survey gives feedback from students to rate their satisfaction with the LMS. The questionnaire aims at giving a clear view of students' perception towards moodle and rate its effectiveness and fit in relation to online learning at the University.

H6: Expected consequences of LMS use will positively influence perceived impact on learning. Learning Management system is a software application used for implementing and administering online learning programs. The students of the University of Belize are mainly using Moodle as their learning platform, the survey will collect information from students to see whether Moodle is efficient enough or if any other LMS would be satisfactory to students. The platform is chosen by the University, but this survey gathers information directly from students to determine if moodle is the best platform in comparison to others. If the consumers were able to choose their own LMS would it positively or negatively impact the students online learning.

Data Analysis and Discussion

The research was conducted via google forms, and our group members were tasked with distributing these forms to students of the University of Belize. The sample group was out of 422 and 422 responses were received which resulted in a total of a 100% desired sample group. The focus is on the 4 constructs namely: Task Technology Fit, Consequences, Impact, and Consumerization. Below display the obtained results of the following information from the survey undertaken:

	All Responses	Moodle Only	Moodle +
TFF	<p>Histogram of TTF Average</p> <p>TTF Average</p>	<p>Histogram of TTF Average</p> <p>TTF Average</p>	<p>Histogram of TTF Average</p> <p>TTF Average</p>
Consequences	<p>Histogram of Consequences Average</p> <p>Consequences Average</p>	<p>Histogram of Consequences Average</p> <p>Consequences Average</p>	<p>Histogram of Consequences Average</p> <p>Consequences Average</p>
Impact	<p>Histogram of Impact Average</p> <p>Impact Average</p>	<p>Histogram of Impact Average</p> <p>Impact Average</p>	<p>Histogram of Impact Average</p> <p>Impact Average</p>
Consumerization	<p>Histogram of Consumerization Attitude Average</p> <p>Consumerization Attitude Average</p>	<p>Histogram of Consumerization Attitude Average</p> <p>Consumerization Attitude Average</p>	<p>Histogram of Consumerization Attitude Average</p> <p>Consumerization Attitude Average</p>

The above table are responses base on a scale of 1-7 one being the lowest and 7 being the highest

Task Technology Fit:

Under the task technology category, it seems that most of these University students have no problem using a Learning management system to conduct their studies. When compared between moodle and another learning management system, it also seems as if there is a slight increase in the number of students being opened to the idea of using a different learning management system than moodle.

Consequences:

Under consequence, the table displays that students feel that moodle compared to another learning management system would be more effective compared to another learning management system

Impact:

Under impact, the table displays that students' overall productivity increases more when using another learning management. However, the number of students who chose moodle are not too far from those who chose another learning management system.

Consumerization:

Lastly, under consumerization. Interestingly, the table presents that students would prefer that teachers use moodle as their preferred method of learning management system to conduct teaching.

Conclusion

This study is aimed to illustrate the attitude of students towards the moodle platform impacts and influences task-technology fit. The research also aims at gathering knowledge if the moodle platform is satisfactory to students of the University of Belize. From the 422 responses that were gathered using our electronic survey, it was concluded that yes, the students are satisfied with the use of moodle as their online learning platform. But similarities from our data gathered and the literature review also showed some form of dissatisfaction with moodle. Based on the literature review 44% of the companies using an LMS were thinking of replacing them with ones that could provide them with a better user experience. And the information gathered with the survey shows a discrepancy between moodle and another learning platform which can be seen under the impact, the table displays that students' overall productivity increases more when using another learning platform.

Limitation

The contribution of this study based on the studies done in the past have contributed to understanding that there is a fine gap between the student's overall satisfaction and the need for a more improved and learning platform. The limitations that were encountered are that there is an overall room for improvement on moodle but to help solve or identify what are the areas of improvement that need to be made in order to get everybody on board in being satisfied with using moodle is lacking.

Recommendations

Recommendations for further studies would be to clearly outline all the features that moodle offers and rate their satisfaction, to have a better understanding in the areas that need to be improved. Further recommendations are to gather more international studies that particularly target the satisfaction of students with each feature that are both tested for their effectiveness and efficiently for the university and the students. Further studies illustrating what training users of Moodle would need to use all the features it has to offer to gain most efficiency.

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Appendix:

Research Instrument (questionnaire)

Greeting Students of University of Belize,

We are currently enrolled in Management Information System Course, we are conducting a survey to Evaluate and gather information of Moodle, Kindly assist us by clicking the link below and filling out the questionnaire. Thanks for your kind assistance.

<https://docs.google.com/forms/d/1gBJJkHHzTkQWSWiAsxCzlKcM8e9ggmSHhoMleVLRrI6U/edit?usp=sharing>