Task Technology Fit - Lecturers Perception of Learning Management Systems

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Abstract

In higher education, learning management systems known as LMS are commonly used. We've especially seen the use of management systems since the start of the pandemic Covid-19 dated back to 31 December 2019. Ever since, schools have been forced to further implement LMS rather than face-to-face learning. One aspect that has been shown to affect both the use of information systems and their success impacts is task technology fit. A task technology fit survey was used as a structure in this study to understand lecturers perceptions of the LMS used, to answer the question of how the learning management system impacts effectiveness and to understand what can be improved within these learning management systems. The results back up the significance of task technology fit, which influenced learning outcomes both directly and indirectly through utilization.

Keywords: Task-technology fit, Learning management systems, Perceptions, Effectiveness

Introduction

The Learning Management System or popularly known as LMS in the community of higher institutions is an online portal that connects lecturers and students. It provides an avenue for classroom materials or activities to be shared easily. It is also a portal that enables lecturers and students to interact out of the classroom, having discussions through forums that could otherwise take up too much of the time supposed to be spent learning in the classroom. Therefore, LMS has created the opportunities for lecturers and students to use digital technologies in educational contexts. Edward P. Yorke High School (E.P.Y.H.S.) a co-educational institution based on a firm foundation of hard work and discipline, formerly named Belize Junior Secondary High School (B.J.J.S.) this high school was founded in 1969 by the Hon. George Cadle Price. Being one of the few high schools located in the northern side of Belize City Edward P. Yorke has approximately 695 students actively enrolled and hosts six first forms, five second forms, five third forms and five fourth form classes.

Edward P. Yorke High School has become a centre for progress in online learning. Like all schools in the country the Covid-19 pandemic has fast track e-learning and has become more creative and innovative in teaching students. Having been blindsided by the Pandemic Edward P. Yorke has tried its best to adapt to online learning. Although many platforms are exercised which includes

Microsoft Suite 365, the main platform used is Google classroom. Students will use this software to collect a variety of data as well as to maintain order and facilitate the smooth operations of the online learning. If students are required to use the google classroom, they can easily download the software on the table which allows access for the other google apps. Currently the most used software/platforms used primarily by the teachers of EPYHS is Google classroom, Google meet, Zoom and Teams. This study will evaluate the effectiveness of Google Meet being adopted and utilized as a learning platform to assist in the learning process at Edward P. Yorke High School during the Covid-19 pandemic.

Literature Review

Task-technology fit is described as the degree to which technology aids a person in performing his or her tasks. It is, more simply, the match between task specifications, human skills, and the technology's functionality. In today's era, we live in a digital world where we are able to analyze how technologies are beneficial or detrimental to the revolution of an individual or persons. Specifically, there is always a perception of learning management systems. In this research, the authors focus on a lecturer perception of the precise learning management system, Google Classroom, at Edward P. Yorke High School. With the digital revolution, online technologies tool has been widely used in higher education to facilitate some form of co-learning among students and lecturers (W.W. Goh, J. L. Hong and W.Gunawan, 2014).

Google Classroom is an open source service for schools created by Google to make designing, sharing, and marking homework easier. It offers a medium for knowledge sharing and acts as a communication tool (W.W. Goh, J. L. Hong and W.Gunawan, 2014). Google classroom can be accessed through the web or a mobile app. Many of the apps you already use, such as Gmail, Google Docs, and Google Calendar, can be used with Classroom. When digital technologies are available in education settings, lecturers have an important role to play to ensure that students are using online technologies in the correct approach. (W.W. Goh, J. L. Hong and W.Gunawan, 2014).

Conducting of the Research

Theoretical Structure Used

Limitations

Methodology

Learning Management Systems are used all over Higher Education Institutions (HEI) in the world and the need to know and understand its adoption and usage arises. On one hand, there are different institutional cultures and characteristics, and on the other hand, there are several distinct LMS tools. Considering this, it is expected to find out distinct experiences in the adoption and usage of LMS from our lecturers in Belize. The richness of each of the experiences can help the worldwide community to better understand how LMS are being used. Google Meet, Zoom, and WhatsApp are cloud-based systems that are all used as Learning Management Systems. These systems are aided in online learning and distance learning for students. Online learning is defined as learning that takes place over the internet, and distance learning is defined as an expanding environment, which allows users to be flexible when operating outside of the constraints of time and place. (Gilbert, 2015). The rate of online learning has increased in Belize due to the COVID-19 pandemic, however, it has grown to be very appealing to learners. This study measures the success and effectiveness of learning using Google Meet and WhatsApp and Zoom and WhatsApp.

Research Design

This study aims to view teachers' perception and view on the LMS use in the classroom during a time of a pandemic at the E. P. Yorke High school. A task technology fit survey was used as a structure in this study to understand lecturers perceptions of the LMS used, to answer the question of how the learning management system impacts effectiveness and to understand what can be

improved within these learning management systems. Therefore, the design of the study is descriptive without any experimental manipulation. Since the study combines the quantitative data and qualitative data related to lectures' perceptions regarding the use of LMS, mixed method research was used. The study aims to answer the following research questions:

1. What is the effectiveness in using of LMS in the classroom?

2. What are the impacts of LMS on online teaching and learning?

3. What are teacher's views and perceptions on LMS?

Participants

The participants of the study were EP Yorke High School lectures. Lectures contributed to the study on a voluntary basis, therefore the ones who provided the required data were all included. In total 33 teachers aged between 20-60 partook in the research where 37% were between 30 to 40 years.

Demographics

Respondents were requested to provide information on their following eight (8) biographical items: Age range; gender; academic qualifications, class level taught and LMS used where a 79.4 % used google classroom.

Form Level

Most of the participants were taught more than one form level. Therefore, the data was spread out in different form levels for teaching.

Research instrument and scales was the task technology fit survey which measured teaching preference, Prior learning management systems use, Task- Technology fit, expected consequence of LMS uses, perceived impact on teaching and consumerization attitude all these use a likert scale using 1 for strongly disagree and 7 strongly agree.

The main research instrument of this survey is its questionnaire which was designed based on the Belize's Education System for the current crisis with online teaching and learning.

Data Analysis

The 48 question survey submitted to the teacher body of Edward P. Yorke High School (EPYHS), comprising of 7 topics with 10 multiple choice and 38 ranking questions. The multiple choice question provide the survey participants with simple 4-9 choices to choose from, primarily on common traits like demographic information and past experience. The ranking questions served to quantitatively gauge their insight, gains and knowledge in their current use of LMS, Google Classroom. The main goal of the survey is to collect research data to identify the common perception of Google Classroom in distance learning in Belize. The data gained from the survey was subjected to a qualitative and narrative analysis based on the teacher's frequent use of Google Classroom to also gauge their capability with the readily available Learning Management System. After 10 days, the survey returned 22 responses for research analysis

Background Information

In the first section of the survey, the respondents were asked to provide demographic information such age, gender and education level. This data present the basic details about the individual respondents in which a commonality can be found. Beginning the respondents' age, the teachers ranged from 20 -50 years old as nine (9) teachers were in 20-30 age, seven (7) in the 31-40 age group and lastly, six (6) in the 41-50 age group (Chart 1). With the 20-30 age group yielding the highest respondents, our research will be little biased towards the younger generation of teachers who are more technologically aware than the other age groups.

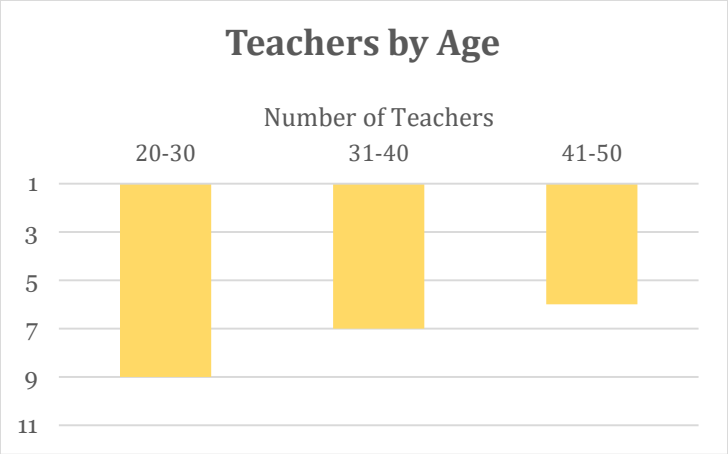


Chart 1: Teacher by Age Group

The gender data collected was also biased towards one group as 16 teachers out of the respondents were female, 73% percentile, the other respondents were 3 male and 3 person who wished not to disclose their gender identity. The data could reflect the current situation of the teaching profession where women outnumber the total of male teachers. Moving forward with the education level of the teachers at EPYHS, the survey collected four (4) Associate Degree holder, fifteen (15) Bachelor's degree holders and 3 Master's Degree Educators. This data was expected as it is now a requirement in Belize for any person in the teaching profession should hold at least a Bachelor's Degree. When the gender and education was compared as reflected in Chart 2, the data showed that the female respondents were the most education with the most Bachelor's and Master's Degrees in the gender groups.

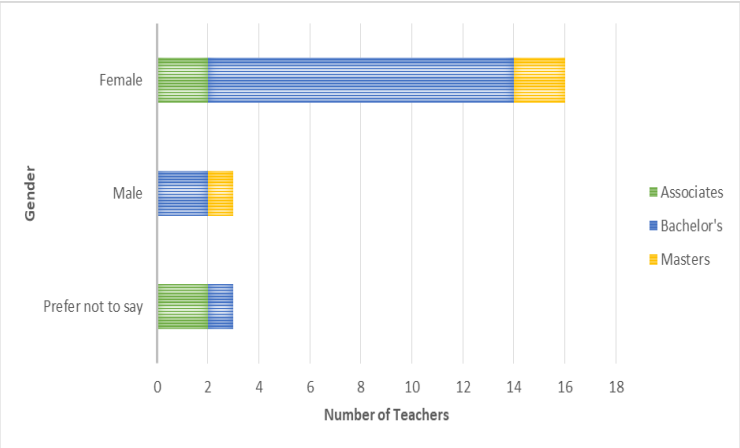


Chart 2: Comparative Gender and Education Level

The survey asked that what level of high school the respondent currently teaches. However, the respondents taught multiple forms in a given semester of high school so as illustrated in Chart 3, the forms most taught by the respondents are first and third form with ten (10) teachers; Second form is taught by nine (9) teachers; fourth form with seven (7) teachers and 1 respondent educating various groups and organizations. The data will provide a well-rounded analysis pertaining the perceived impact on teaching section on the survey data. Last in the Background information gathering, the teachers were asked if they had used an

LMS prior to their current daily use and which platform did they use. The result of this question was a resounding "yes" with teachers having prior experience with more than one LMS. The most of the educators being familiar with Google Classroom with 47% (16 teachers); Microsoft Teams with 26% (9 teachers); Google Meets with 18% (6 teachers) and the lowest LMS being Zoom Meetings with 9% (3 teachers). The question is directly linked to Prior Learning Management System (LMS) Use section to provide insight into the prior experience of the respondent and their keenness to continue with the use of LMS. Before that inquisition, their teaching preference data was to be collected to gauge their compatibility to the use of LMS.

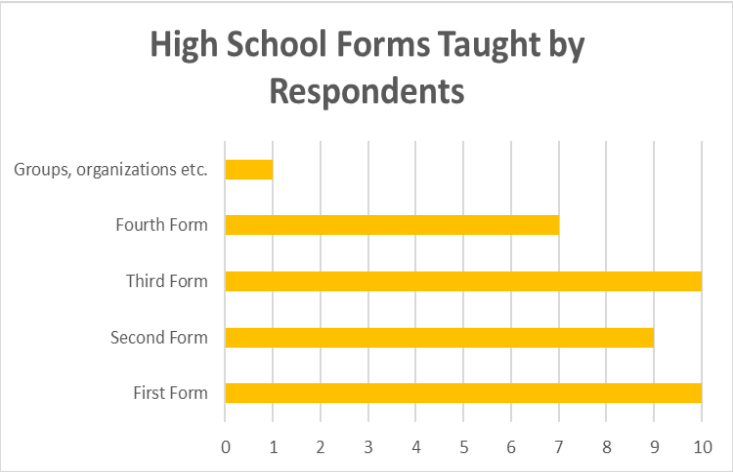


Chart 3: Forms Taught by Respondent Teachers

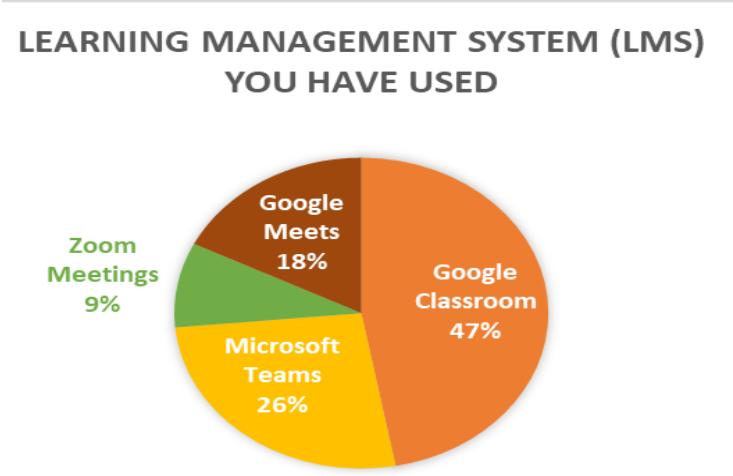


Chart 4: Learning Management Systems Used

Teaching Preferences

Primarily using ranking questions to ascertain the teachers' opinion on the use of LMS in their student's education, On a scale of 1-7, one (1) meaning the teacher strongly disagrees with the statement and 7 being they strongly agree. With this ranking system, an average, min and max values were generated to gauge the

collective agreeability of the statements presented to the educators. Our first statement posed to the teachers "I prefer teaching face to face rather than online" was met with ooverwhelmingly agreeable response of preferring face to face teaching, over online learning with a combined score of 5.91 as seen in Table 1. The 22 teachers continued to strongly disagree when presented with the statement that a student learn more effective with online learning. One teacher in an interview noted that Belizean High School students are less focused in their home as there tends to be more distractions such as a watchful parent causing nervousness, younger siblings craving attention or just plain surfing the internet during the online session." (L. Arnold). When asked if they would like to continue teaching online courses, most teachers seemed inclined to the option with a collective response average of 4.95. Overall, the teachers' reception of online learning as their primary education method is slightly enthused was the average score of this section was 4.93, being a marginally agreeable response.
Associates and Bachelor's Degree holding Teachers intensely agreed with the query "I am more effective teaching face to face than online" with an average response of 6 while Master's education level Teachers noted to be indifferent between face to face and online teaching.

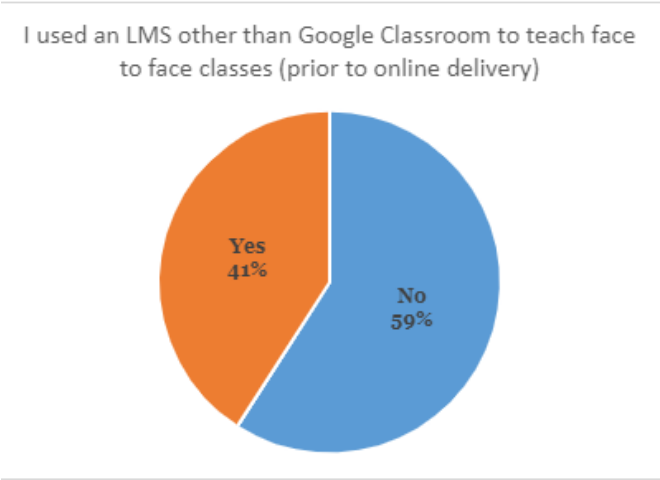
Teaching Preferences Data Collection	**Average**	**Min**	**Max**
I prefer teaching face to face rather than online.	5.91	3.00	7.00
I am more effective teaching face to face than online.	5.59	3.00	7.00
Students learn more in my face to face classes than online.	6.00	4.00	7.00
I would want to teach some online courses after the High School resumes face to face teaching.	4.95	3.00	7.00
I would want to teach all my courses online after the High School moves back to face to face teaching.	3.36	1.00	6.00
I would not want to teach any online courses after the High School moves back to face to face teaching.	3.77	1.00	7.00
TOTAL	**4.93**	**1.00**	**7.00**
Table 1: Teaching Preference Data Collection			

Prior Learning Management System (LMS) Use

The survey collected that the teachers are rather inexperience with their use of learning systems before the transition to distance learning as the section only had a response score of 3.34, slightly disagreeable with the statements provided as show in Table 2. It was also relative to the fact that a large majority of the teachers had only have 1 or 0 semesters experience teaching with Google Classroom at EPYHS. However, the 59% majority answered "yes" to having used another LMS other than Google Classroom to teach face to face. The data showed that teachers in this section, once again being more inclined to face to face teaching rather than using LMS for distance learning.

Prior Learning Management System (LMS) Use	**Average**
Please state the number of semesters you have used Google Classroom.	2.48
How many semesters have you taught using an LMS other than Google Classroom.	0.91
I plan to continue using Google Classroom to enhance my teaching after we return to face to face teaching.	4.95
I would like to continue using my preferred LMS to enhance my teaching after we return to face to face teaching.	5.00
TOTAL AVERAGE	3.34

Table 2



Task – Technology Fit

The respondents were more favorable towards the use of Google Classroom for their online teaching experience as the overall average for their use of the platform was 5.63 as shown in Table 3, which is a highly agreeable score. With the highest average score, being given to the statement posed "Google Classroom is easy to learn" with a collective score of 6.27. 22 teachers found the platform to be user friendly and had the ability to present information to their students in an easy to follow manner. This data would indicate that Google Classroom was a good choice for the school to offer to its teacher making the transition from face to face learning to online teaching more controlled.

Task – Technology Fit Data Collection Table	**Average Response Score**
Google Classroom fits well with the way I like to teach online.	4.82
Google Classroom is compatible with all aspects of my online teaching.	4.86
Google Classroom is easy to use.	5.86
Google Classroom is user friendly.	5.91
It is easy to get Google Classroom to do what I want it to do.	5.77
Google Classroom is easy to learn.	6.27
It is easy for me to become more skillful at using Google Classroom.	5.86
New features of Google Classroom are easy to learn.	5.68
.... Google Classroom to the students is presented in a useful format?	5.41
... provide accurate information to your students with Google Classroom?	5.52
.... provide up-to-date information to your students with Google Classroom?	5.57
.... students need in time using Google Classroom?	5.86
.... seems to be just about exactly what your students need with Google Classroom?	5.76
Total	**5.63**
Table 3	

Expected Consequences of LMS Use

This section of the survey teachers' adaptability and professional growth were assessed with the use of LMS in their daily lesson plans. The average response score was an agreeable score of 5.34 as represented in Table 4 below, providing that teachers were able to administer lessons quickly and accurate with little to on trouble. It should also be noted that teachers felt that their teaching performance and quality improved with the use of the Google Classroom.

Expected Consequences of LMS Use – Data Collection	Average
Using Google Classroom will help me to accomplish my online teaching more quickly.	5.40
Using Google Classroom will improve my online teaching performance.	5.15
Using Google Classroom will increase my online teaching productivity.	5.39
Using Google Classroom will enhance my effectiveness as a teacher while teaching online.	5.30
Using Google Classroom will make it easier to complete my teaching tasks while teaching online.	5.65
Using Google Classroom will give me greater control over my teaching tasks while teaching online.	5.05
Overall, I think that Google Classroom will be useful in my ability to teach online.	5.40
Using Google Classroom will improve the quality of my online teaching.	5.40
TOTAL	**5.34**

Table 4

Perceived Impact on Teaching

This section of the survey can be viewed as the ultimate goal of the research as it directly asked the respondent about their perception of teaching using Google Classroom. It was recorded that the teachers' overall opinion on this notion was founded as they believed that Google Classroom had a "large positive impact on [their] effectiveness and productivity as a teacher" and the tool is a valuable aid to their lessons, with an average score of 5.28. The 22 respondents viewed that they are better teachers by utilizing Google Classroom as shown above in Table 5.

Perceived Impact on Teaching – Data Collection	***Average Response Score***
Google Classroom has a large positive impact on my effectiveness and productivity as an online teacher.	5.16
Google Classroom is an important and valuable aid to me in my online teaching.	5.58
I teach better online with Google Classroom than without it.	5.11
Total Average	**5.28**

Table 5

Consumerization Attitude

It was presented to the survey participants in the final section, "if given the option to select their own Learning Management System, would they?" and how they believed it would shaped their online teaching

experience further than Google Classroom has. The overwhelmingly response to statements posed in Table 6 below, was agreeable to the opinion that their LMS of their choosing would be better than Google

Classroom with an average response score of 5.53. Most notable was the teachers' agreement to the statement "If I could choose my own Learning Managements System, I would work faster while teaching online" with the highest average score of 5.72 with the section. This recalls the information provided in the Background Information, Chart 4 whereby 53% of the survey participants used another LMS other than Google Classroom so this can indicate a comfortability with a previously used LSM platform such as Google Meets, Zoom Meetings and Microsoft Teams.

Consumerization Attitude – Data Collection	**Average Response Score**
If I could choose my own Learning Managements System…	
…it would fit well with teaching online.	5.50
…it would fit well with helping me to be efficient in teaching online.	5.50
… it would be compatible with my online teaching.	5.56
… my online teaching performance would improve.	5.33
… my online teaching productivity would improve.	5.59
… I would work faster while teaching online.	5.72
TOTAL AVERAGE	**5.53**

Table 6

Discussion

The final average response score representing the opinions of 22 teachers was 5.01. This figure would indicate a positive experience with Google Classroom and willingness to continue using the LMS platform for their online teaching plan as shown in Table 7. The prior use of the Learning Management Systems stands as the lowest among the sections as teachers preferred face to face teaching over distance learning. Only with the recent need to transition to the online teaching, the respondent, some for the first time, utilized Google Classroom. The overall response to Google Classroom was a slightly agreeable score of 5.01, indicating some improvement such as giving the teacher's more control over the information shared, will be needed for the teachers of EYPHS to better amalgamate to utilizing Google Classroom as their preferred method of teaching.

Survey Questionnaire Sections	Average Response Score
Consumerization Attitude	5.53
Expected Consequences of LMS Use	5.34
Perceived Impact on Teaching	5.28
Prior Learning Management System (LMS) Use	3.34
Task – Technology Fit	5.63
Teaching Preferences	4.93
Grand Average	**5.01**

Table 7

Conclusion

In conclusion, learning management systems does impact online learning positively. The perception of lecturers shows that they view LMS to be most of all useful and effective. In secondary education, e-learning is becoming more common. All available evidence suggests that enrolment and provision are increasing.

The current study sought to learn about lecturers' perspectives on the use of Learning Management Systems (LMS) in all topics. Moreover, potential researchers might perform a study on the Learning Management System (LMS), which would include the benefits and notably also the drawbacks of using the LMS.

The future researcher can investigate the Learning Management System (LMS) from various perspectives. While the current researcher used the perspectives of lecturers and/or instructors, a potential researcher might use the perspectives of students.