

Google's GSuite applications in Open University system's perspective

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ABSTRACT. Online Learning is one of the needed requirement for distance education. Electronic learning plays a vital role in education nowadays. Electronic learning with the use of computers plays an important role in modern education. Its contribution lies in the fact that content is available at any place and device from a fixed device to mobile device. The requirement of the PSU Open University Systems to conduct blended learning is a learning management systems or another platform that is available online. Google released tools available under GSuite for Education. Since 2012, Pangasinan State University is subscribed to GSuite for Education, and recently Google introduces several applications for an educational institution such as the Classroom. The main objective of this research is to identify the usability and evaluation based on the teacher's perspective on the use of GSuite applications such as Google Classroom, Hangouts, and other application. This study also measures the problems encountered and the satisfaction level in the use of applications based on the result of the study, the respondents agreed that GSuite application such as Classroom and Hangouts is recommended to use as a tool in blended learning education, but it was found out that the applications are all suitable to the needs of the Open University Systems. The result of this study is significant in order to adopt the GSuite application only in the blended learning approach for Open University Systems.

KEYWORDS: eLearning, Google, open university

Introduction and background of the study

Electronic learning has become common nowadays seeing students use even the most basic social media platforms as a tool in education. Researchers have been conducted to show that technology plays a vital role in education. But while Social Media contributes to the development of collaborative learning, it can, however, also prove to be a distraction to the learners themselves (Tess, 2013). While Several LMS (Learning Management System) can play a part in solving this issue, server and maintenance costs bring about another problem altogether. It is because of this reason that Google introduces a new tool to help the tutors become more effective in learning. Mayes and de Freitas, in the review of eLearning theories, frameworks and models, insisted that it is important to be clear about the assumptions underlying eLearning designs (Mayes, de Freitas, 2004), they claim that there are no specific models for eLearning, but only enhancements of existing models of learning which use technology to achieve better learning outcomes (Mayes, De Freitas, 2007; Mayes, de Freitas 2004).

Pangasinan State University is one of the state university in the Philipines that has Open University Systems, and despite the presence of the OUS in the institution, there lacks a pure online instruction done by the institution's component. Since the OUS is located in Lingayen Campus, the researchers observe the mode of learning in the Open University and come up with possible utilization of technology and possible collaboration in the future. Based on the benchmarking of the institution in the UP Open University and Don Mariano Marcos Memorial Statement University, the pioneer institution uses Moodle as a distance eLearning platform while DOUS uses free based LMS such as NeoLMS. For Pangasinan State University, which doesn't have yet adopted Moodle due to the absence of the budget in the Annual Procurement plan, GSuite eLearning platform provided by Google will serve as a solution to the problem. The institution itself is a recipient of GSuite for Education plan, a suite of free productivity tools that help students and teachers interact seamlessly and securely across devices for free (Iftakhar, 2016).

One part of the GSuite application for education is Google Classroom, it is one of the free services by Google in Gsuite for Education plan, and it boosts collaboration and fosters seamless communication to make teaching more productive and meaningful while promoting paperless instruction for streamlining assignments. Google Classroom can be easily deployed in the URL classroom.google.com, where educators can set up a classroom in minutes and create content for students. Google Classroom is free for schools and also includes best-in-class security with no extra cost for plan holders (Singer, 2017; Rowe et al. 2013). The platform also integrates with other Google tools to help educators provide instant feedback and track student progress to improve performance plus a mobile application enhancing ease of access at any moment regardless of time and location.

The objective of this study is to identify the usability of Google GSuite applications as an online learning tool as well as evaluate Google classroom based on the feedback from the teachers and also identify the usability and features of the tool. Besides gathering the profile of the research participants, this study sought to answer three major question: (1) What is the level of usability based on the evaluation of faculty in academic activities and non-academic activities? (2) What is the platform quality characteristics regarding usability? (3) What are the external and internal problems encountered and overall satisfaction with Google GSuite Application? The scope of this study is

limited to the use and requirements of Pangasinan State University, Open University System which was conducted during the 1st Semester of 2017-2018. This study is limited in the use of the platform in academic, non-academic activities and its usability; the paper doesn't cover problems arose in the use of the platform and further investigation and comparison to other eLearning platform and was only tested using a blended approach.

Related studies

As Technology increases, there are several studies contributed to the body of knowledge in education regarding the use of technology in education. The integration of Massive Open Online Courses could change the way the teachers' teach (Martin, 2012), and new development in education was implemented. Several big universities adopted the use of MOOC as a tool for learning. Despite the development of online courses, LMS such as Moodle is still the most common LMS. Moodle is defined as "a learning platform designed to provide educators, administrators, and learners with a single robust, secure and integrated system to create personalized learning environments" (Martin, Taylor, 2003). Several studies conducted related to Learning Management Systems and Moodle is one of the free open-source platforms. The study of Melton Jay entitled *The LMS Moodle: A usability evaluation* the researchers examined the registration process and assignment submission module function on the usability Moodle. While respondents finished the task, one-half were not ready to finish the last undertaking of presenting a task. The explanation for the assignment was not finished by a few because of lack of experience in using LMS (Melton, 2006).

From the previous study (Ventayen et al. 2018) The authors tested the platform in the students of Pangasinan State University BSBA and BSHM Students, while the perspective of students might differ to the teacher's perspective, this study was conducted to measure the evaluation based from the teachers. There have been several studies conducted on the use of social media for education, but one problem arising constantly is the disadvantage of it such as distraction in the classroom. In the research title: Exploring Facebook to Enhance Learning and Student Engagement, KK Esteves, A Case from the University of Philippines (UP) Open University study the tends to study the potential of Facebook in education seeing as the Philippine users are one of the most active users of Facebook (Esteves, 2012). The study indicates how the distinctive components and functionalities of Facebook, including, poke, like and the wall, will reach media easily resulting in engagement of students in online learning. "Student engagement improved as evidenced by volunteered postings and continuous discussions and sharing even without being required by the professor". The study's most significant finding is Facebook's feature proved very useful for teaching practical skills posted online. Despite the result of the study, distraction is still the main problems encountered in using social media in education.

Research methodology

This part of the study is the methodology which was adopted from the previous study. To determine the usability of Google GSuite application as an eLearning platform. The tool was tested first. The researchers proposed to use and test Google GSuite application such as Classroom, Hangouts, Drive, Docs and other application available in the GSuite. Google Classroom was used as an eLearning tool during the Semester of SY 2017-2018 of Pangasinan State University, Open University Systems. A

web administrator's account created all Google Classroom classes and distributed to the Faculty members after the orientation to the platform.

During the class, the graduate students were also asked to download the application to be used in learning. The faculty was oriented to upload all the required instructional material for the subject and conducted academic and non-academic related activities. After the testing, an adopted questionnaire from the previous study with ISO 9126 standard questionnaire for usability was used.

Data source

The respondents are the faculty member of PSU Open University Systems who uses the GSuite application in learning. The sampling of respondents is purposive since only those teaching in the said term is the one who is qualified to respond. During the 1st Semester of 2017-2018, a total of 24 classes for the first semester and 26 classes in the second semester with a total number of 18 faculty respondents.

Data Processing

The online form was used as a mode of answering the questionnaire; the link was given to the faculty members.

The result generated from the forms that were used to interpret the data. The CSV format data was exported for analysis using google sheets.

Scale	Range	Interpretation	Interpretation	Interpretation
5	4.21 - 5.00	Extremely Useful	Very Effective	Very Satisfied
4	3.21 - 4.20	Useful	Effective	Satisfied
3	2.61 – 3.40	Neutral	Somewhat Effective	Neutral
2	1.81 – 2.60	Not Useful	Less Effective	Dissatisfied
1	1.00 – 1.80	Extremely Not Useful	Not Effective	Very Dissatisfied

Table 1. Likert Rating Scale

Likert Scale was used to determine the level of usefulness of Google GSuite Application. An adopted survey questionnaire with few modifications was created to answer the question in 1 and 3, while the platform was evaluated using the ISO 9126 standard questionnaire for software quality in terms of usability.

Results

While students are respondents from the previous study, the results of the study are based on the answers from the faculty of the Open University Systems for the two-semester where the GSuite application was used.

Profile of the Faculty and GSuite Usage

From the total of 18 faculty respondents, 16 are doctorate degrees. 13 are education majors, 3 are public administration or management majors, and the rest are Information Technology majors. It was expected that majority of the respondents are Doctorate degrees because OUS is offering a graduate study program in master and doctorate. OUS is also offering Doctorate and Master degree in Education; this is the reason that majority of the respondents are education major.

GSuite Application	No of Faculty Uses	Percentage
Classroom	18	100%
Hangouts	16	88%
Mail	15	83%
Docs, Sheets, and Slides	10	55%
Drive	5	27%
Forms	3	16%

Table 2. GSuite Application Usage

Google GSuite application is not only limited to Google Classroom. As shown in the table, all of the respondents use Google Classroom as an alternative Learning Management System. Hangouts were also used by 16 respondents or 88 percent. Gmail used by 15 respondents in education-related activities, while the productivity tools of Google uses by ten respondents. Google Drive and Forms has the lowest number of respondents who use it in education-related activities.

Respondents use Google Classroom to provide assignments to the students since the Open University System has only 5 to 10 meetings, the remaining hours are conducted online and thru module. Since Google Classroom has no built-in chat settings unlike Moodle Platform, the respondents use Hangouts for video and chat session. The only advantage of the GSuite application is ease of use, but functionality is limited, and several programs are needed to install to use all the application for education purposes.

Overall GSuite Application Level of Usefulness

Based on the total number of respondents, Majority of the respondents agreed that Google Classroom is extremely useful in Discussion, Assignments, Collaborative Learning and Individual Project with a weighted mean of 4.66, 4.72, 4.66 and 4.50. While for the non-academic related activities, all of the respondents agreed that announcement is extremely useful.

Activity	WM	Interpretation
Discussion	4.66	Extremely Useful
Quizzes	2.88	Neutral
Assignment	4.72	Extremely Useful
Collaborative Learning	4.66	Extremely Useful
Peer Tutoring	3.72	Useful
Individual Project	4.50	Extremely Useful
Group Project	4.07	Useful
Examination	3.05	Neutral

Non-Academic Related Activities

Activity	WM	Interpretation
Announcements	4.72	Extremely Useful
Posting of Results/Grades	2.83	Neutral

Table 3. Level of Usefulness

ACADEMIC RELATED ACTIVITIES

It is visible that Google Classroom is extremely useful mostly in academic-related activities such as Discussion, Assignment, Collaborative Learning, and Individual Project. Discussion and collaborative learning were done using Hangouts, where it can be recorded on youtube as an option for future viewing, the respondents use the application to communicate with students in real time. The assignment is one of the best features of the Classroom, where the respondents use most of the time in Assignment and Project. The average weighted mean for the Academic Activities is 4.03 and 3.77 for Non-academic activities; both activities are interpreted as useful.

Some respondents from the Open University System uses the Moodle platform in another teaching load; this is the reason the faculty knows distance education practices. While the GSuite application is extremely useful in most of the related academic activities, quizzes and examination activities failed the expectation of the respondents with an average weighted mean of 2.88 and 3.05 respectively. Obviously, the application and platform were not suitable to be used in the Open University System's perspective due to the lack of validation features.

Usability Evaluation using the ISO 9126 standard

Usability is defined as A set of attributes that bear on the effort needed for use, and on the individual assessment of such use, by a stated or implied (Jung, Kim, Chung, 2004). Thus, Google Classroom and other application were evaluated by the faculty members based on Understandability, Learnability, Operability, and Attractiveness with the following results.

Activity	WM	Interpretation
Understandability (Easy to understand)	4.66	Very Effective
Learnability (Easy to Learn)	4.72	Very Effective
Operability (Easy to Operate)	4.42	Very Effective
Attractiveness (Attractive)	4.38	Very Effective

TABLE 4. USABILITY EVALUATION USING ISO 9126

The result of the usability evaluation of the GSuite applications based on the result of the evaluation regarding usability, Learnability was leading in the perception of Teachers. The platform is very much similar to the other google application, where it is observed that most of the respondents have an account. Orientation regarding the platform was done before the implementation in order for the respondents to familiarize in the use of the applications, the majority of the respondents were pre-surveyed regarding the use of productivity application of Google, and most of the respondents agreed that Google Docs, Sheets are easy to understand and operate in the cloud. The user interface of the platform was easy to learn and operate due to the similarity of the interface such as the buttons. This evaluation concludes that Google GSuite application is usable based on the findings and result of the survey but with limitations of use.

Problems Encountered and Overall Satisfaction

Most of the external problems encountered by the respondents the lack of internet connection speed. As of the date, the fastest internet connection available in the location of the institution is the LTE technology. While Fiber connection is available in the town, the area is not yet serviceable as of the date. Most of the respondents use chat session only, while only a few of the respondents tried video session during the discussion.

For the internal problems encountered by the respondents, several functions are not available in the Google applications for examinations and quizzes. Unlike other platforms such as Moodle, respondents can see the number of chat session of the student for the tally. It is also a problem encountered by the respondents that they need to install several applications for full functionality of the GSuite applications.

	VD	D	N	S	VS
Frequency	2	1	7	5	3
Percentage	11.11%	5.56%	38.89%	27.78%	16.67%

TABLE 5. LEVEL OF SATISFACTION

For the level of satisfaction on the use of GSuite applications, the majority of the respondents are Neutral. While there is a greater number of satisfaction than dissatisfaction, the majority of the respondents see the GSuite application, not as a total application for the Open University Systems.

Conclusion

Google GSuite application has a contribution in blended learning, but it is not a platform for a purely online approach. Based on the result, Google Classroom is useful from the faculty for the blended learning approach, but it is not a complete requirement for an Open University Systems. The Google GSuite application is not suitable for quizzes and examination according to the respondents, but it is extremely useful for non-academic activities. The platform is extremely useful in most academic activities except for examination and quizzes due to lack of validation features. It is suggested that institution who practice blended learning could utilize the platform as a tool for eLearning while those offering pure online courses must use other Learning Management Systems. Based on the evaluation of the platform, Google Classroom is extremely effective in understandability, attractiveness, and operability. It is recommended to implement the platform for blended learning approach, while OUS is not limiting it is offering to blended learning approach, another platform such as Moodle is highly recommended for the institution.

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