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The Efficiency and Constraints of the G-Suite for Education as the Learning Modality of Philippine School of Business Administration – Manila: Basis for Learning Management System Implementation

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ABSTRACT

This study assessed the efficiency and constraints of G-Suite for Education as the remote learning modality for the Philippine School of Business Administration (PSBA) – Manila during the 2020–2021 academic year. Utilizing a quantitative descriptive-correlational research design, the researcher surveyed 125 undergraduate students and 11 faculty members to evaluate the platform's performance across five key indicators: instruction, delivery, learning tasks, submission, and assessment. Findings revealed that both students and faculty perceived a high level of efficiency, with faculty ratings (Strongly Agree) being slightly higher than student ratings (Agree). Most respondents utilized Google Classroom as their primary platform, citing ease of use and streamlined submission processes as significant advantages. Despite these successes, the study identified several constraints, including limited internet connectivity, reliance on mobile data, and external environmental factors such as noisy home settings and domestic responsibilities. Statistical analysis through t-tests indicated no significant difference in the perception of efficiency or constraints between the two groups, while Pearson R tests confirmed a significant relationship between these variables, suggesting that the constraints did not fundamentally undermine the platform's overall effectiveness. The study concludes that G-Suite is a viable Learning Management System (LMS) for the institution and proposes a formal Project Plan to enhance its implementation, focusing on faculty upskilling and data privacy awareness to ensure sustainable remote teaching and learning.

Keywords: *G-Suite for Education, Learning Management System (LMS), Remote Teaching-Learning (RTL), Educational Efficiency, Learning Constraints, Google Classroom, Blended Learning, Flexible Learning Modality.*

INTRODUCTION

G-Suite for Education is a collection of application tools that enhances critical thinking, communication, collaboration and creativity. All that addressing learning objectives that educator set for teaching. It is a Suite of free Google tools and services that are fit in school and even home schooling set up. Educational Institution may avail this if they qualify (Kasey Bell, 2020).

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In August 12, 2014, Google Apps for Education (GAFE) launched Google Classroom. The application is free to use for teachers and students which makes it an ideal fit for developing countries, where the budgets are limited. It can act as a Learning Management System (LMS) in schools, colleges, and higher education institutions. Teachers can effectively utilize classroom time using Google Classroom.

G Suite for Education provides a suite of cloud-based tools to K–12 and higher education institutions and homeschools. The tools and services include: Google Classroom is a free application designed to help students and teachers communicate, collaborate, organize and manage assignments, grade and give feedback, go paperless, and much more; Google Chrome Sync is a feature that allows End Users to synchronize bookmarks, history, passwords, and other settings across all the devices where they are signed in to Chrome; Gmail is a free, web-based email platform that offers SPAM protection and is completely ad-free in G Suite for Education accounts; Google Drive allows you to store your files securely and access them from any device, as well as create, open and edit your files. You have UNLIMITED storage space with G Suite for Education; Google Calendar is a free, web-based calendar platform that is completely ad-free in G Suite for Education accounts; Google Vault lets you retain, hold, search, and export your organization's mail and chat messages. You can also search and export your organization's files in Google Drive; Google Docs is a free, web- based word processing tool that allows you to create and edit documents online and collaborate in real-time; Google Sheets is a free, web-based spreadsheet tool that allows you to create and edit spreadsheets online and collaborate in real-time. It is great for data analysis and organization; Google Forms is a free, web-based form tool that allows you to create forms, surveys, and quizzes that collect response information in real-time; Google Slides is a free, web-based presentation tool that allows you to create and edit presentations online; Google Drawings is a free, web-based diagramming software. It allows users to create flowcharts, mind maps, concept maps, and other images; Google Sites is a free and easy way to create and share websites and web pages; Google Meet is a free communication and collaboration tool for video calls, and screen sharing; Google Hangouts Chat is a free online chat system for individual and group chats; Jamboard is a web-based service that allows End Users to create, edit, share, collaborate, draw, export, and embed content within a document; Google Keep is a web-based service that enables End Users to create, edit, share, and collaborate on notes, lists, and drawings; Google Tasks Keep track of your daily tasks, organize multiple lists, and track important deadlines with Google Tasks; Google Groups allows you to create and participate in online forums and email-based groups with a rich experience for community conversations; Google Contacts is a web-based service that allows End Users to import, store, and view contact information, and create personal groups of contacts that can be used to email many people at once.

Google may also collect information based on the use of G- Suite for Education services. This includes Device information, such as the hardware model, operating system version, unique device identifiers, and mobile network information including phone number of the user; log information, including details of how a user used the service, device event information, and the user's Internet protocol (IP) address; location information, as determined by various technologies including IP address, GPS, and other sensors; unique application numbers, such as application version number; and Cookies or similar technologies which are used to collect and store information about a browser or device, such as preferred language and other settings.

Philippine School of Business Administration implements Flexible mode of teaching and learning for Ay. 2020 – 2021. As such, the School uses Google Suite for Education as its Learning Management System (LMS). Last July 1 and 2, 2020 the School have conducted the Train the Trainer Session with Mr. JD Mercado a Google Certified Educator (Level 1 and 2), Google for Education Certified Trainer and Innovator. Thereafter, three batches of echo training were conducted by Lead Trainer Mr. Dominic Taday (Newly appointed SHS Principal and General Education Coordinator) on July 9 – 10, 13 – 14, and 15 – 16, 2020. The sessions were facilitated by lead Facilitator Dr. Nina Florentino (Department Head - BSBA) with assistance from Mr. Carlo Luna (Chief Librarian). These training sessions were conducted onsite following the health and safety protocols of the School. Virtual trainings were also held for faculties who were unable to attend the face-to-face training.

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Philippine school of Business Administration – Manila to with its Faculty is fully committed to implement the G-Suite for Education as the Learning Management System (LMS) and live up to the vision for its student: "The Right School for Complete Business Education" (retrieve from official Facebook page, July 18, 2020), and so to address the demand of distance learning nowadays, the school has to cope up and adapt learning management system that will cater remote learning despite pandemic.

Hence, the researcher wants to conduct study as basis for learning management system implementation that will be adapted by the school which has been tested to know its strengths and constraints. This will strengthen his proposal for a standard Learning Management Implementation of the institution.

The concept of education has undergone a major shift amidst this Covid-19 Pandemic, from teacher-centered to diverse learner- centered. Earlier, teachers played the role of knowledge providers, but now their role has expanded. There is a lot of emphasis on integrating technology in the classroom through innovative teaching strategies that focuses on enabling students to achieve the desired learning objectives (Hwang, Lai, & Wang, 2015). Technology facilitates increasing student engagement which is critical to obtain the desired learning objectives (Bolkan, 2015).

Advocates and critics of using educational technologies have found a middle ground through Blended (or hybrid) learning (Hinkelman, 2018). The following term, blended learning, mixed- mode learning, and hybrid learning are used interchangeably (Zhao & Breslow, 2013). Blended learning allows a smooth transition from a shift-in teaching methodology, for teachers and learners. It is important that the goal should not be just to integrate technology in the classroom; instead, pedagogical objectives should determine the different mode of teaching instructions (O'Byrne & Kristine, 2015).

Challenges, difficulties, or constraints affects the efficiency of the Learning Management System (LMS). One drawback is the possibility of students not having the chance to connect or relate to their classmates, unlike in the face-to-face school set up where students may ask their peers or teachers for immediate clarifications. This may cause stress and other mental problems among the isolated students. Another setback among students is that they may lose interest in the subject matter and thus become less-effective learners. At times, it is also hard to obtain immediate feedback or other related concerns from teachers due to the asynchronicity. Other than social problems that a student may experience, the internet itself may become a problem for some students as not all household have stable internet connections.

Furthermore, the obvious challenges in an online learning is the gadget's capability to connect to internet or merely its capacity to handle educational application that a learner may use during the conduct of class. Not to mention external factors that plays vital role for the continuity of learning, this involves the surrounding of the students, the conduciveness of the place of study, as some students claim they do not have the luxury of private spaces for them to conduct their online class (Ervin Delas Peñas, 2020).

Philippine School of Business Administration – Manila choses the G-Suite for Education to be its Learning Management System (LMS) and the mode of teaching as this is, if not the most accessible and gadget (user) friendly so far in terms of connectivity and specification of the gadget, availability of the educational application be it IOS or android driven devices.

Theoretical Framework

Constructivism theory proposes that "knowledge is being actively constructed by the individual and knowing is an adaptive process, which organizes the individual's experiential world" (Mayer, 1992). A major concept of the Universal Design for Learning (UDL) framework is the integration of new technologies to enhance the instruction and improve the learning.

Karagiorigi and Symeou (2005) discussed how instructional designers are challenged to translate the philosophy of constructivism into actual practice because constructivism poses the existence of many levels of abstractions of knowledge construction. The first level of abstraction stemming from sensory-motor experiences or from a perceptual experience, and if an experience is repeated with some level of reliability, we can conclude that, under the particular circumstances, it is a viable construct.

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One of the main beliefs of the constructivist is that people develop and build understanding from their own personal and subjective experiences. Craig and Van Lom (2009) discussed how mobile technology is an effective tool when instructional design is designed based on the constructivism theory. For instruction design, a teacher can be excellent and excel at implementing constructivist learning theory when they introduce curriculum in conjunction with mobile technologies.

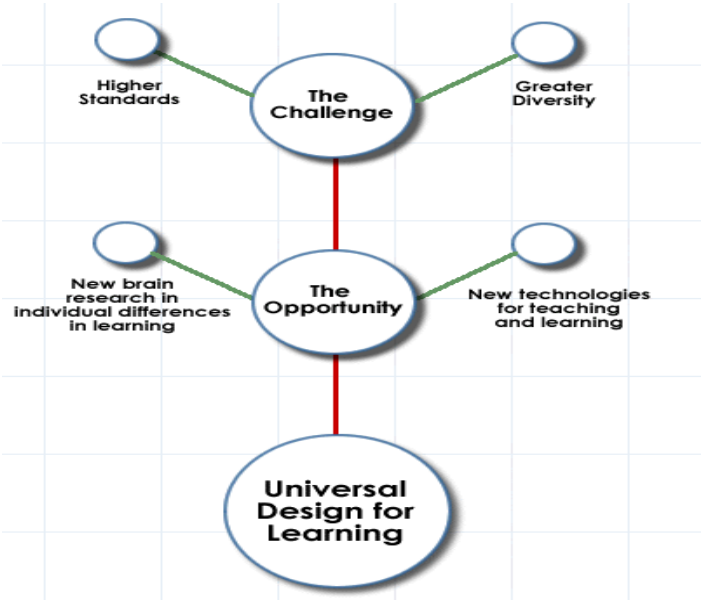

Figure 1. *Theory of Universal Design for Learning (UDL) Framework*

A research on "Framing Information and Communication Technologies (ICT) Implementation in a Context of Educational Change - A Structural Equation Modeling Analysis" (Wong and Li, 2011) stated that despite the common belief that Information and Communication Technologies (ICT) has the potential to support certain fundamental changes in learning, few have examined Information and Communication Technologies (ICT) implementation conceptually within a wider context of educational change which also supports the first theory. Methodologically, we are by and large limited to building simple models that accommodate only a single dependence relationship among variables. Framing Information and Communication Technologies (ICT) implementation as a process of interactions among pedagogical and organizational factors in bringing about changes in student learning, this article used data collected from 1076 teachers in 130 schools to construct a structural equation model (SEM), from which we are able to examine multiple interrelated dependence relationships in a single model. Results indicated that from teacher perspectives, the collegial capacity of Information and Communication Technologies (ICT) implementation strategies played a central and mediating role in effecting changes in student learning, of moving away from a teacher-centered approach to one that is more student-centered. Specifically, Information and Communication Technologies (ICT) brought about these changes in the context of establishing collegiality in fostering pedagogical innovations in schools. Implications for both researchers and practitioners are discussed.

Hence, this will help the researcher to develop concepts in frame-working the study and lead to the success of it.

This own theory shows that Learning Management System development depends on the assessment in the use of the tools. Despite of its efficiency, there are still challenges, difficulties or constraints.

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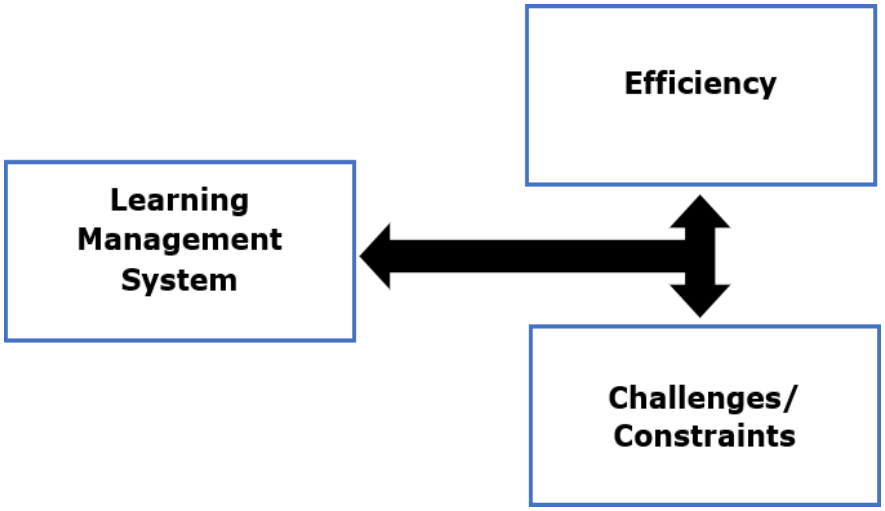

Figure 2. *Own Theoretical Framework on Learning Management System (LMS)*

With the said theories, the Framework on Learning Management System (LMS) is theorized.

Conceptual Framework

The paradigm of the study shows the input which include the profile of the respondents as regards to age, gender, year level and section, G-suite platform used and academic rating for midterm. It also consists of the assessment in the efficiency of using G-suite as learning modality in terms of (1) instruction, (2) delivery, (3) learning tasks, (4) submission, (5) assessment.

Stated also in the input are the constraints in the conduct of G-suite as learning modality in terms of: kinds of gadgets used, internet connectivity and external factors.

The second frame is the process which includes gathering of data, survey questionnaire, unstructured interview, and statistical analysis and interpretation of data.

The third frame is the output which proposes utilization in preparing a proposed Learning Delivery Development Plan to use G- suite as Learning Management System of the School for improvement of learning deliverability.

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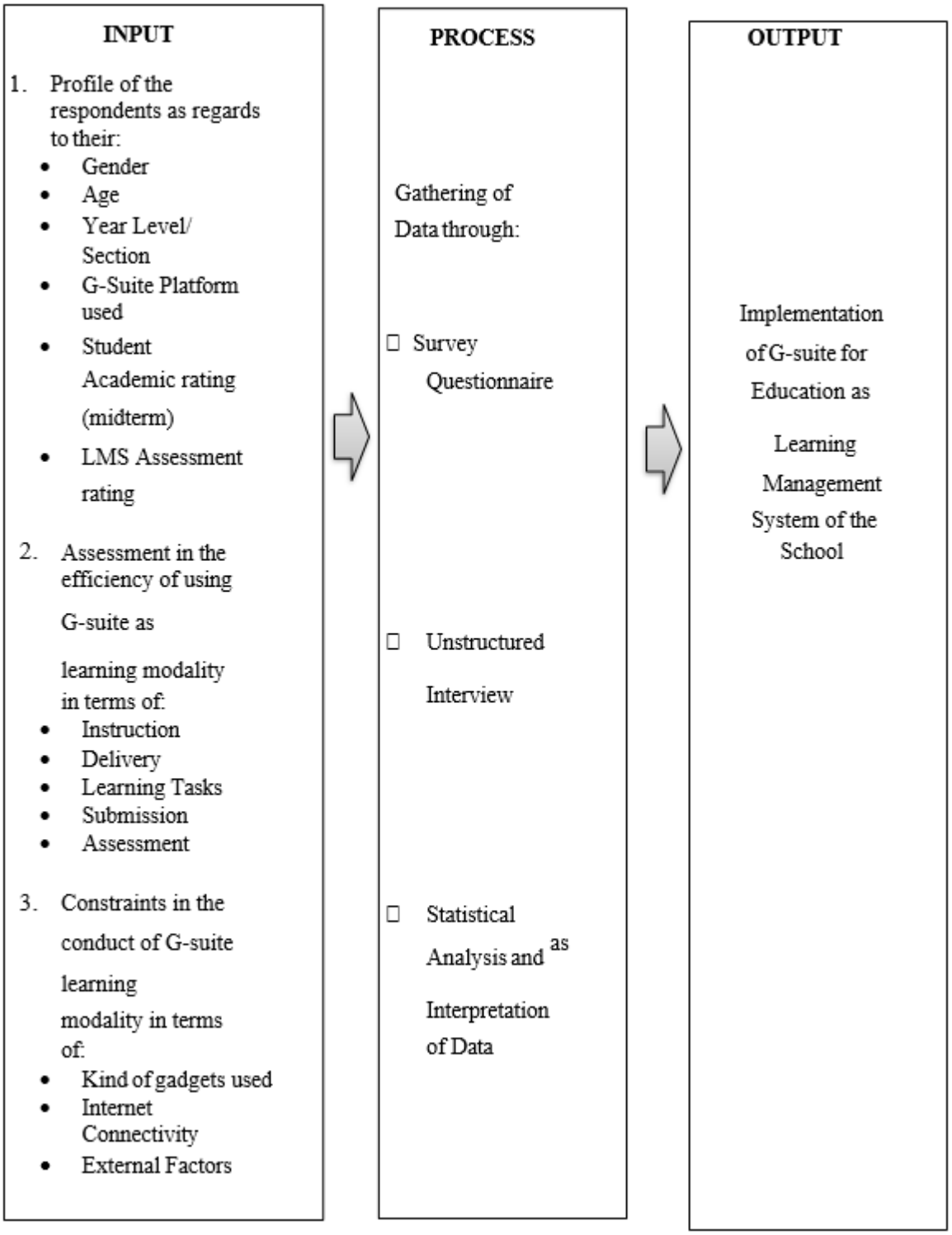
Conceptual Framework



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Statement of the Problem

This study aims to assess the efficiency and constraints of G- Suite for Education as the Remote Teaching-Learning (RTL) modality of instruction of Philippine School of Business Administration – Manila for A.Y. 2020 – 2021 as basis for Learning Management System (LMS) implementation.
Specifically, the study seeks to answer the following questions:

1.What is the profile of the respondents in terms of:
- 1.1 Gender/Sex
- 1.2 Age
- 1.3 Year Level (Student)/ Years in Service (Faculty)
- 1.4 G-Suite Platform/Application Used
- 1.5 Assessment Rating for G-Suite for Education Readiness (Faculty)/Midterm Examination Rating (Student)

2.How is the level of efficiency in using G-suite for Education as learning modality for student be describe in terms of:
- 2.1 Instruction
- 2.2 Delivery
- 2.3 Learning Tasks
- 2.4 Submission
- 2.5 Assessment

3. Is there a significant difference in the level of efficiency in using G-suite for Education as learning modality in terms of the above variable as assessed by the two groups of respondents?
4. How are the level of constraints in the conduct of G-Suite for Education as learning modality assessed by the respondents be describe in terms of:
- 4.1. Kind of gadgets used
- 4.2. Internet Connectivity
- 4.3. External Factors

5. Is there a significant difference in the level of constraints in the conduct of G-suite for Education as learning modality as assessed by two groups of respondents?
6. Is there a significant relationship between the level of efficiency and constraints in the conduct of the G-Suite for Education as assessed by the two groups of respondents?
7. What program can be proposed to enhance the implementation of G-Suite for Education as Learning Management System?

Literature Review

Teaching innovation undoubtedly conducts to the use of new technologies (ICT). These days there exist a great deal of fascinating applications and programming programs at various fields as instructional tutorial booking, structure making, report in-the-cloud joint effort, internet mentoring and meeting, visits, snappy overviews in class. There are plenty of them. An ever-increasing number of educators around the world are utilizing some of them for executing their learning advancement. Nonetheless, these programs and applications are typically dedicated uniquely to one purpose and they are in many cases not interconnected. Most educator requests that at any rate the most significant applications were coordinated in a special stage. Google Suite for Education (G-Suite) (formerly known as Google Apps for Education) is a response to this case. It is a software environment, with interlaced and completely compatible applications, that permits learners and instructors to do a significant number of the undertakings engaged with modern teaching-learning process. It allows the use of several Google products in a unique domain, which is customizable by the client It is obviously oriented to educational centers. Schools, colleges, learning centers… can obtain a G Suite

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account with a domain, which identifies them. (E. Romero, University of Zaragoza (SPAIN), 2018) G Suite incorporates various tools. Gmail permits a typical email account with unlimited storage (Google Drive) for every individual user. It has a powerful "anti-spam" filter and permits the design of customized accounts with the domain of the center. Storage and ubiquitous access (for u-learning and m-learning) is ensured also by Google Drive. Google Sites enables the school to make effectively intuitive pages without HTML or programming aptitudes. Google Calendar is a planning and appointment reminder for educators. Plans, meetings, deadline are overseen so learners can plan their worktime. G-Suite additionally incorporates Google Docs, Sheets, and Slides (like Microsoft Word, Excel and PowerPoint). With Google Forms educators can gather data and know the learners understanding through forms and questions and answers questionnaires. Every one of these programs might be utilized exclusively yet it is the joint use what makes the G-Suite an exceptional and extremely valuable set of tools. For instance, Google Classroom is a fascinating and amazing instructive platform, as educators can without much of a stretch make, share and grade tasks utilizing devices as Forms, Sheets, Docs, and so on. As a result of a thorough integration, G-Suite permit educators and learners to work in a collaborative environment. For instance, learners can make, share and edit files simultaneously in a real-time basis. This is conceivable because files and documents are in the cloud through Google Drive and the learners can access it with their Gmail accounts.

This reality is additionally critical to develop groups and collaborative work aptitudes. (J.M. Artacho,2018). Likewise Google 'Universe' offers additionally fascinating instruments for instructive use, as Google Keep (available for-everybody notes), Google+ (a social network as Facebook and others), Google Hangouts, now Google Meet (like Skype), Google Scholar (books and records search), Google Maps and Google Earth (situating in certain subjects), Google Translate (language studies and more) or Google News (select sources and get alerts from news). Google Suite for Education and 'Google Universe' in general is an incredible and powerful tool of incorporated applications that it is worth to utilize. It is an incredible alternative if educators and learners want to work cooperatively utilizing intuitive and simple to-use instruments for improving their learning process. (J.S. Artal-Sevil,2018).

According to the article of Riki Rahmad,et al (2019) on Google classroom implementation in Indonesian higher education, Google Classroom application is intriguing by researcher considering (1) this media permits different alternatives learning resources for learners outside of the material that has been given by the educator using data innovation and can be utilized to help the absence of conventional learning, (2) the campus already has a network WiFi is equally disseminated in every faculty that can be utilized by all in the campus, (3) numerous learner who have carried laptop to support teaching and learning activities as well as completing assignments on campus, (4) simplicity of utilizing Google Classroom that can be used on PCs, PCs, and Android-based cell phones that are generally owned by learners and faculty. The above contemplations show that there is specialized help accessible to connect the usage of learning by applying the Google Classroom application media, while thought number 1 above is required to be one of the methods for setting off students' learning independence and critical reasoning. Further, social networking network can be incorporated into Learning Management System (LMS), for example, Blackboard, eCollege, LoudCloud, and Angel. These web-based learning applications are ground-breaking, integrated platforms that assist educators with creating online projects to convey cutting edge online courses.

These platforms have been known to encourage learning, correspondence, and joint effort and Skype-based electronic coaching frameworks and adapting Learning Management System (LMS) have been discovered gainful for educators (Suk Hwang & Vrongistinos, 2012; Ucol-Ganiron, 2013).

According to an article Attitude of High School Students in Using Google Classroom as a Learning Management System (LMS) on April 2019 of Stephen Legarse, The Google Classroom, as a free Web-Based Learning Management Systems (LMS), is utilized everywhere on the world and has tackled a few instructional issues including going paperless, non-presence of students during face-to- face discussion, asynchronousity of learning time and others. In addition, it gives an online stage to educators in making an online variant of their classroom that mirrors the learning activities and learners can present their outputs online. With the

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success march of e-learning, Google Classroom has opened opportunities for learners to encounter 21st Century learning with the guide of 21st century learning innovation. The goal of this is to explore the disposition of 120 High School students of St. Therese Christian Development Center Foundation, Inc. (STCDCFI), Tacloban City, Philippines in utilizing the Google Classroom as a Learning Management System (LMS). Adapting the Technology Acceptance Model (TAM) and utilizing the Multiple Regression Analysis (MRA), the outcomes indicated that Perceived Usefulness (PU) and Perceived Ease of Use (PEU) have huge impact to the mentality of learners towards the utilization of Google Classroom. Besides, this research uncovered that learners have an ideal disposition towards the use of Google Classroom as a Learning Management System (LMS). Thusly, basic education establishments ought to furnish secondary school learners with a positive platform for web-based learning using Learning Management System (LMS) and ought to guarantee quality substance and improved ICT frameworks.

In an article entitled "The Status of The Implementation of the E-Learning Classroom in Selected Higher Education Institutions in Region Iv-A Amidst the Covid-19 Crisis" (Ethel Reyes-Chua, et.al, 2020), state that because of the COvid-19 crisis, Higher Educational Institutions (HEIs) have turned to online classes or E-Learning Classrooms to convey the content of their curriculum in d various platforms. This research analyzes the status of the usage of the E- Learning classroom in selected HEI's in Region IV-A by leading a qualitative approach utilizing a survey questionnaire to a small group of experts who have been teaching different courses in the tertiary level. This study used the descriptive method of research to draw out the current status of the execution of the e-learning classroom in selected HEI's. An online survey data was gathered and analyzed using the descriptive and documentary analysis. Discoveries demonstrate that the respondents had great encounters in presenting the E-learning classroom as an immediate response to the nation's enhanced quarantine situation. Although all the E- learning platforms utilized by the respondents are free of charge, still, learners have experienced issues like lack of resources, difficulty of Wi-Fi connection, and absence of necessary training among the learners and faculty members. This study suggests professional development workshops for both faculty members and learners and preparation of advanced lessons, slide presentations, and assessments per unit to cope with the prescribed number of hours set by the Commission on Higher Education (CHED). It is additionally expected that this research would fill in as a future guide for leading an in-depth study utilizing a structured interview to validate its discoveries.

Here in the Philippines, the utilization of technological innovation in conveying and overseeing instructive framework had been of the essential focal point of practically all learning institutions. Distance Education had been adopted by major universities like University of the Philippines, Dela Salle University, Ateneo De Manila University [8] and Mapua University, to name a few. (Aventurado, 2019).

Parallel to the Department of Education (DepEd), the Commission on Higher Education (CHED) instructed different institutions of higher education in the Philippines to execute distance learning education methods for its classes, for example, the utilization of educational technology, to expand the scholastic term in spite of the suspensions. A few other public and private tertiary institutions executed such courses of action for its classes; however, several student groups appealed to CHED to suspend mandatory online classes in consideration of the logistical limitations and well- being of a majority of students. (Alipio,2020).

With the continuous flood of Covid-19 cases in the nation, a potential choice to proceed with schooling while at the same time preventing potential infection spread, is electronic learning (e- learning). E-learning has been a typical conveyance media for schooling in developed countries. The Philippines just like any other developing country have endeavored to grasp the new learning space; in any case, monetary and acknowledgment factors remain to be a difficulty that would restrict its potential use. While both the supply and demand for e-learning opportunities have ascended lately, numerous experts are starting to address whether learners are set up to be effective in a web-based learning climate. All things considered, the showed achievement of learners in a traditional instructional setting may not be a sufficient indicator of accomplishment in an e-learning classroom. Drawn on the current pandemic and expected move to full e-learning, this study has focused on the descriptive evaluation of readiness of higher education Filipino students

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for e-learning. (Alipio, Mark (2020): Education during COVID-19 era: Are learners in a less-economically developed country ready for e-learning?).

Google Classroom was launched in 2014; in this manner, contemplates identified with the adequacy of Google classroom are restricted. Shaharanee, Jamil, and Rodzi (2016) analyzed Google classroom's dynamic learning exercises. They utilized TAM (Technology Acceptance Model) to study the effectiveness of the activities posted on the platform. The results of 100 learners revealed that comparative performance of Google classroom was much better in the areas of communications, interaction, perceived usefulness, ease of use, and overall students' satisfaction. Similarly, (Espinosa, Estira, and Ventayen, 2017) conducted research to assess the usefulness of Google classroom as a Learning Management System (LMS).

The study found that cost was the essential reason behind the selection. Collaborative learning through tasks and assignments were seen as a very successful tool for improving learner's engagement. Liu and Chuang (2016) led action research in Taiwan in which they utilized Google classroom with the integration of peer tutor mechanism for 6th grade students. Learners held a positive recognition with respect to the utilization of Google Classroom. The learning goals were likewise accomplished. Martínez-Monés et al. (2017) called for an integration of learning analytics with Google classroom as they accepted that this is a significant restriction of the arising application. Up until this point, to the best knowledge of the researcher, all the exploration led on Google classroom have demonstrated a positive reaction from the learners. None of the study has focused on considering the educator's view of the viability of Google Classroom. The function of educators in the appropriation of any new learning strategy should not be disregarded as they are the focal figure in the change of educational practices. Google Classroom is a web-based service provided by Google as an e-learning system (Martínez-Monés et al., 2017). This system was intended to assist educators with making and disseminate assignments to the learners in a paperless manner. Users of this service must have an account in Google. Moreover, Google Classroom must be utilized by schools that have Google Apps for Education. Google Classroom was utilized to encourage cooperative activity of an educator or instructor with a student or learners in the virtual world (Liu and Chuang, 2016). Lecturers uninhibitedly hand out a logical evaluation and give an independent task to the learners (Wijaya, 2016). Moreover, educators can likewise open space for online discussion for learners. Google Classroom usage can be made through various platforms, i.e., through PCs and cell phones. Educators and learners can visit the site at https://classroom.google.com or download the application through Play Store on android or iOS application store with keywords "Google Classroom". The Learning Management System (LMS) use is free of charge, so that utilization can be performed as needed.

Google Classroom Education is one of the features by Google Apps to Education (GAFE) which was released to the public on August 12, 2014. Google Classroom is an application that permits the making of classroom in the internet. It can be utilized as means for the distribution of tasks, assignments submission as well as assessment. Google Classroom can be downloaded with no charge by registering themselves on the Google account application for education. Google Classroom application is helpful for online teaching and learning, and can be gotten for free and can be utilized on any gadget. One of the sophistications of this application is that it very well may be utilized cooperatively with other groups. There are countless advantages of utilizing Google Classroom as one of the Learning Management Systems (LSM) (Izenstark and Leahy, 2015).

Integrating Technology in Classroom

Educational institute's management or administration has a significant task to carry out in incorporating innovation in classroom as they need to finance or manage the process and ultimately decide to what extent they plan to use technology. Oznacar and Dericioglu (2017) conducted a study in secondary schools on the role of the administrator in the utilization of technological innovation where they found that the administrator held positive convictions with respect to coordinating technology in the classroom. One of the numerous purposes behind the disappointment of not effectively incorporating innovation was that the

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administrators accepted that 80% of their faculty were not innovatively mindful to utilize it successfully; subsequently, the venture fizzled.

Another research by Machado and Chung (2015) indicated similar discoveries in which they contemplated the role of the principal during the time spent integrating technology in the classroom. Discoveries uncovered a solid conviction of administrators of educators' absence of specialized preparing and competency which was keeping the schools from technology integration. Samy et al. (2008) consider educators' acknowledgment as a significant factor in the compelling utilization of technology in the classroom. The role of administrators is to encourage the preparation and framework for the educators; be that as it may, eventually the educator needs to improve the utilization of technology with the learners.

The educational technology, right now, isn't transformative alone, learners learning can improve just through an educator; consequently, it is significant that educators' acknowledgment of technology is present. Blair (2012) has mentioned two components in giving an environment for technology integration. To begin with, educators need to put technology under the control of learners cautiously by choosing the correct mediums. Second, technological tools should be continually advancing to upgrade problem-solving, innovation, decision-making, and teamwork.

Based on the literature review section, this study is focused on teachers' perceptions of the effectiveness of Google Classroom.

Capabilities of Google Classroom as a Teaching and Learning Tool in Higher Education.

This study adapted the social constructivism theoretical frame work which includes that people learn better through their surrounding and experiences. John Dewey and Lev Vygotsky suggested that person's learning and experiences is vague, which they go as one and support one another (Liu and Chen, 2010). This obviously implies that, most importantly, when students begin using Google classroom services, they gain from their association with the facilitator and their experiences on using taking in organization structures from the facilitator. Students can learn at their own chance without affiliation and push from others, learning happens at whatever point with no time constrain given the student has association with web accessibility (Desmond and Mafa, 2017). Skills and knowledge are not affected to them just through in contact classroom hours, yet rather through and e-learning stage through joint exertion with the others (Desmond and Mafa, 2018). This is alluded to by Lin and Jou (2013) as a test consideration in getting. Ouyang and Stanley (2014) agree that assorted sorts of this hypothesis have been used in teaching and learning, with the point of convergence of moving a long way from teacher centered methods of reasoning to student focused instructional methods. The usage of technology innovations has been believed to be incredible in spreading instructions, nonetheless, no investigation in Botswana has focused on the ampleness of Google classroom use in teaching and learning as a device focusing on the focal point of learning instructional techniques. Innovation advancement as concluded by (Mafa and Desmond, 2017) permits a couple of activities for use in and outside of the classroom. It progresses community-oriented learning and impacting learners to realize what is happening around them and to have the ability to make future expectations. In assistance of the above conclusions, a study on the utilization of Web 2.0 tools and above by Ajjan and Hartshorne (2008), who assessed the knowledge of workers in the use to help in class learning, discovered that employees felt that the gadget which was under investigation could improve learning.

Advantages of using Google Classroom in Teaching & Learning

The following are the benefits of utilizing Google classroom for teaching and learning; (1) It engages educators to post class materials, e.g.: assignments, announcements, due dates and the learner can see all that is posted by the instructor. It likewise empowers learners to have the capacity to remark and make inquiries on the web with the goal that others can likewise remark and post back; (2) Google classroom interfaces with ones Google drive and viably supervises information in a folder. Right when students submit tasks or assignments, and the teacher posts learning materials and notes, all the materials are supervised in one central

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folder in Google drive. This folder can be visited at whatever point needs be; (3) Google classroom can be assessed anytime whenever utilizing a personal computer or any gadget with web association and an internet browser; (4) It engages progressing learning because the student and the educator can be sited on different geographical settings and when one post announcement or comments, the other individual can see them instantly. Toward the day's end, it grants progressing collaborative effort, in which students can share files or documents instantly, transfer archives and assignments; (5) It permits formation of private classes and groups so that there are no outsiders to unapproved groups or classes. This ensures protection and classification when students are to introduce their class tasks and submit assignments or projects.

Google classroom allows the teacher to welcome and associate the guardians so they can track their children's performance progress and may get notification thru email relating to the learning of their kids. Janzen (2014) has noted that Google classroom is easy to interact with and use. He further concluded that it spares time since it has an easy-to-use interface and one doesn't battle to utilize it since it integrates the use of other Google applications including; docs, slides, and spreadsheet and many more applications.

Chehayeb (2015) added that they designed this classroom to be paperless and to spare time, thus its beneficial. He said other intriguing highlights that it can send out evaluations to Google Sheets and Microsoft excel for simple altering, and amending the remarks and rating of the learner. (Ajjan and Hartshorne, 2008) remarked that this web 2.0 tool is effectively open to both the learner and the educator completely in an online environment and that it isn't accessible and available to learners who don't belong to an instructive establishment or who are a part of some course. One can download this free application and install it in his/her mobile technology device; this makes learning on the go and easy. The primary tool to use in teaching and learning now a days is the mobile technology device (Mafa and Desmond 2018).

Technological innovation assumes fundamental part in education. There are researchers conducted studies that social media adds to the improvement of the collaborative learning, it likewise gives an interruption to students. Many Learning Management System (LMS) comprehend this issue, yet the expense of server and maintenance is another issue. Subsequently, Google presents another tool that will assist the teachers with getting more effective in learning. In the review of eLearning theories, frameworks and models, Mayes and de Freitas stressed that it is essential to be clear about the suspicions underlying eLearning designs, they guarantee that there are actually no particular models for eLearning, just upgrades of existing models of realizing which use innovation to accomplish better learning results.

Pangasinan State University is one of the state universities in the Philippines that has Open University Systems (OUS), despite the presence of the OUS in the institution, there is no pure online instruction done by the institution component. Since the OUS is located in Lingayen Campus, the researchers observe the mode of learning in the Open University and come up with a possible utilization of technology and possible collaboration in the future. based on the benchmarking of the institution in the UP Open University, the pioneer institution uses Moodle as a distance eLearning platform. While Pangasinan State University doesn’t have allocated budget for the implementation of Moodle due to the absence of the budget in the Annual Procurement plan, G-Suite eLearning platform provided by Google will be an answer. The institution itself is a recipient of G-Suite for Education plan, which is a suite of free productivity tools to help students and educators interact seamlessly and securely across devices for free.

As many educational institutions are facing or planning for temporary campus closures due to COVID-19, Google is providing distance learning solutions by providing tools, training, and resources to help them stay connected through G Suite for Education.

G Suite for Education is a set of free productivity tools built for teaching and learning which includes Hangouts now Google Meet (for video and voice conferencing), Gmail, Docs, Slides, Sheets, Forms, and Google Classroom. With this, schools that need to continue with their curriculum can conduct distance learning where faculty and learner can remain productive and make valuable learning time despite not being in one physical classroom together.

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"We're committed to supporting our users, partners, and the broader local community during this challenging time. We hope that our distance learning tools such as G Suite for Education, training, and resources can help our teachers and students stay connected at home and continue with their curriculum as needed," said Bernadette Nacario, Country Director, Google Philippines.

The study of Oye et al (2011), examines the application of e- learning model to explain the acceptance of e-learning technology in academic setting. Their study mainly focuses on the relationship of students' use of e-learning and their academic performance. Their results show that e-learning improves student academic performance. According to these authors positive perception of e- learning is crucial to foster the use of e-learning. Although students" attitude influence the intention to use the e-learning, the actual use of e-learning improves the academic performance of students. Their study is from a developing country of Malaysia which is close to Philippines but its conclusions are in relation to e-learning perception, attitude and performance. This study does not specifically address the issue of unintended consequences of e- learning but only the intended consequences of e-learning and the mechanism to improve it.

Another paper by Lumadi et al, 2013 [14] addresses the impact of e-learning on the academic performance of student- teachers. They conducted an experiment to determine if student- teacher taught using method of e-learning performed better that student- teacher taught using the traditional method of teaching and learning. Their findings suggest that e-learning has a significant influence on the performance of students as student-teachers taught using e-learning consistently perform better than student teacher taught using the traditional method. In their conclusion, e-learning was found to have a significant effect on student-teachers. They supported an initial professional development of student-teachers based on e-learning technologies, change in training approaches, strategies and activities in order to meet the educational challenges. Their study was focused on South Africa and could be useful to developing countries such as Philippines. This study however does not address the issue of unintended consequences of e-learning.

The review of related literature and studies provides significant insights and additional inputs on the chosen topic for the study. The researcher likewise increases significant information about the proficiency of using G-Suite for Education comparable to Learning Management System (LMS).

Moreover, the review of related literature and studies additionally features the significance of utilizing G-suite for education which underlines its Efficiency and adequacy. Challenges were also cited in some of the reviewed literature in using G-suite for education.

Lumadi (2013), Oye (2011) et al, pointed out that educators have experienced factors which greatly influences the use of e- learning in higher education system. G-suite and other platform show to be significant component to become in having a successful and efficient Learning Management System (LMS).

In the number of studies made, it has been seen that solitary few show great impacts of the constraints in utilizing G-suite for education applications to the academic performance of the learner.

Be that as it may, during the readings, a portion of these challenges have been a road to make a superior and more grounded Learning Management System (LMS) of the institution.

Yet, the majority of the studies incorporate similar view and discoveries with respect to the elements and different factor sand other variables in a given subject. Nonetheless, they were discovered not the same as the current undertaking in terms of the research venue, methodology, respondents of the study and specific indicators used in the questionnaire.

Whereas, aims to find out the efficiency and constraints in using G-suite for education in remote teaching as basis for Learning Management System (LMS) of the Philippine School of Business Administration – Manila.

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METHODS

Research Design

The researcher made use of Quantitative type of research, specifically descriptive survey and correlational design. Bueno (2016) described descriptive method as systematically the facts and characteristics of a given population or area of interest, factually and accurately. Its characteristics are accumulated in a database to describe a situation. While correlational permits the measurement of several variables and their interrelationships simultaneously and in realistic setting; and gets at the degree of relationship (Bueno,2016). This study used the descriptive-correlational method because it intends to assess the relationship between the efficiency and constraints in using G-Suite for Education in Remote Teaching- Learning (RTL) as basis for Learning Management System (LMS).

Sources of Data

This study used primary and secondary data to analyze the entire research. Primary data used are the survey questionnaires administered, retrieved, analyzed and interpreted by the researcher. The secondary was the literature review, published journals, thesis and websites related to study which further add analysis to the study. The data used in the study is quantitative. Quantitative data is defined as the value of data in the form of counts or numbers where each data-set has a unique numerical value associated with it. This data is any quantifiable information that can be used for mathematical calculations and statistical analysis, such that real-life decisions can be made based on these mathematical derivations. Quantitative data is used to answer questions such as "How many?", "How often?", "How much?". This data can be verified and can also be conveniently evaluated using mathematical techniques. (2020 QuestionPro Survey).

Subject of the Study and Sampling Technique

From a population of Six Hundred forty-two (642) Undergraduate students (enrolled in the first semester of the academic year 2020 – 2021 per the office of the registrar) and Thirty-Four (34) listed Faculty, the student respondent will be selected using Stratified Random Sampling and for the faculty respondent Purposive Sampling will be utilized. In the selection of these respondents, the researcher applies and uses the stratified sampling procedure for student-respondents and purposive sampling for faculty-respondents. In a stratified sample, researchers divide a population into homogeneous subpopulations called strata (the plural of stratum) based on specific characteristics (e.g., race, gender, location, etc.). Every member of the population should be in exactly one stratum. Each stratum is then sampled using another probability sampling method, such as cluster or simple random sampling, allowing researchers to estimate statistical measures for each sub- population. Researchers relied on stratified sampling when a population's characteristics are diverse and they want to ensure that every characteristic is properly represented in the sample.

Thus, the researcher applies the formula:

$$nh = (Nh/N) * n$$

Where:

nh= Sample size for the stratum Nh= Population size for the stratum N = Size of entire population
n = Size of entire sample

Purposive sampling (also known as judgment, selective or subjective sampling) is a sampling technique in which relies on his or her own judgment when choosing members of population to participate in the study.

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Purposive sampling is a non-probability sampling method and it occurs when elements selected for the sample are chosen by the judgment of the researcher. Researchers often believe that they can obtain a representative sample by using a sound judgment, which will result in saving time and money.

Alternatively, purposive sampling method may prove to be effective when only limited numbers of people can serve as primary data sources due to the nature of research design and aims and objectives.

Criteria of the respondents will be helpful to the purposive selection. It is in these premise that the researcher selected faculty members who have been teaching three (3) years or more as a determining criterion to be a faculty – respondents.

In purposive sampling personal judgment needs to be used to choose cases that help answer research questions or achieve research objectives.

Research Instrument

The following instruments were used in conducting and collecting of the data for this study.

a. Study Questionnaire

The researcher used the midterm examination rating of the selected Undergraduate Students and a survey questionnaire. To assess the level of efficiency in using G- suite for Education as the learning modality for student and the constraints encountered by the respondents in the conduct of G-suite for Education, the researcher used a survey-questionnaire and the result of midterm examination presents in tabulation. This questionnaire intends to assess correlation of the efficiency in the use of G-suite for education and constraints encountered as basis of Learning Management System (LMS) of the Undergraduate Program Students of the Philippine School of Business Administration – Manila.

The questionnaire was composed of three parts. The first part intends to elicit the profile information of the respondents as regards to gender/sex, age, year level, g- suite platform/application used, assessment rating for g-suite for education readiness and academic rating (midterm examination).

The second part dealt with the assessment of the respondents on the level of efficiency in the use of G-suite for Education as learning modality as to the following indicators:
(1) Instruction (2) Delivery (3) Learning Tasks (4) Submission (5) Assessment.

The third part was concerned with the level of constraints encountered by the respondents in the conduct of G-suite for Education as learning modality in terms of Faculty:
(1) Kind of gadgets used (2) Internet Connectivity (3) External Factors; Learner: (1) Kind of Gadgets used (2) Internet Connectivity (3) External Factors.

The scale used in this study were as follows: Part II – (5) Strong Agree, (4) Agree, (3) Neutral, (2) Disagree, (1) Strongly Disagree and for Part III – (5) Strongly not Evident, (4) Not Evident, (3) Neutral, (2) Evident, (1) Strongly Evident.

In quantifying the descriptive responses in the questionnaire, the following criteria were used:

Scale for Part II

Weight	Limits	Verbal Interpretation
5	4.20-5.00	Strongly Agree
4	3.40-4.19	Agree
3	2.60-3.39	Neutral
2	1.80-2.59	Disagree
1	1.00-1.79	Strongly Disagree

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Scale for Part III

Weight	Limits	Verbal Interpretation
5	4.20-5.00	Strongly not evident
4	3.40-4.19	Not Evident
3	2.60-3.39	Neutral
2	1.80-2.59	Evident
1	1.00-1.79	Strongly Evident

Scale for Correlation

Size of Correlation	Interpretation
0.90 to 1.00 (-0.90 to -1.00)	Very high Positive (Negative) Correlation
0.70 to 0.90 (-0.70 to -0.90)	High Positive (Negative) Correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate Positive (Negative) Correlation
0.30 to 0.50 (-0.30 to -0.50)	Low Positive (Negative) Correlation
0.00 to 0.30 (0.00 to -0.30)	Negligible Correlation

b. Validation of Questionnaire

The researcher prepared survey questionnaires and the Midterm examination results of the respondents presented to his adviser, check and validated by the panel members for approval and recommendations. Moreover, it will be subjected to expert validation by the Learning Management System (LMS) Administrator of the Philippine School of Business Administration – Manila.

The research-made questionnaire were pre- administered with ten (10) students and five (5) faculty. The pre-selected respondent will not be included in as the respondents of the study. After the dry-run, results will be tabulated and subjected for the validity test. Once validated, the instrument is considered reliable as well.

Data Gathering Procedure

The researcher started to gather data in the Philippine School of Business Administration – Manila once the approval and endorsement letter of school management, as response to the letter of intent of the researcher. Conduct and Administration of the survey questionnaire were held with the help and guidance of the LMS Administrator. Retrieval of the accomplished questionnaires was expected after a week upon commencement. Gathered data will be tabulated and will be treated statistically for proper interpretation.

Statistical Tools

The following formulas were used for the statistical analysis of the data gathered.

a. Percentage was used as a descriptive statistic to describe the relationship of a part to whole.

Formula:

$$\text{Percentage (\%)} = \frac{f}{N}x100$$

where:

% = percent symbol
f = frequency of respondents
N = total of member of respondents

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b. Weighed Mean was used to determine the responses for each item.

Formula:

$$\overline{WX} = \frac{\sum fx}{N}$$

where:

$\overline{WX}$	=	weighted mean
x	=	weights assigned
f	=	frequencies for each option
N	=	total number of respondents

Interpreting the descriptive ranking of the weighted mean was determined using the following scales.

c. T-Test was used to determine the significant difference in the respondent's level of efficiency in the use G-suite and constraint encountered, the T-test formula is:

Formula:

$$t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{{s_1}^2}{n_1} + \frac{{s_2}^2}{n_2}}}$$

Where:

t	=	t – value
$X1$	=	mean of the first sample
$X2$	=	mean of the Second sample
$S1$	=	Standard deviation of the first sample
$S2$	=	Standard deviation of the Second sample
$n1$	=	Number of measurements in first sample
$n2$	=	Number of measurements in Second sample

d. Pearson R test was used to determine the relationship between respondent's assessment as regards to the level of efficiency and constraints in the conduct of G-suite for education.

Formula:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2]\left[[n\sum y^2 - (\sum y)^2]\right]}}$$

Where:

r = Pearson correlation coefficient x = Values in the first set of data

y = Values in the second set of data

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n = number of pairs (x,y) sample.

RESULTS AND DISCUSSION

Sex

Table 1 portrays the distribution of the student-respondents according to sex.

Table 1. *Distribution of the Respondents according to Sex*

Sex	Student - Respondent		Faculty - Respondent	
	Frequency	Percentage	Frequency	Percentage
Male	30	24%	5	45%
Female	95	76%	6	55%
Total	125	100%	11	100%

As presented in table 1, student – respondents are mostly female which is 95 or 76% of the total population. While male respondents are 30 or 24% of the population. The total student- respondents are 125.

Table 1 likewise shows that most of the faculty-respondents are female with the total of 6 or 55% out of the total population. Meanwhile, male faculty-respondents are just 5 or 45% of its total population. The total population of faculty-respondents is 11.

Age

Table 2 presents the distribution of the respondents according to age.

Table 2. *Distribution of the Respondents according to age*

Age	Student - Respondent		Faculty - Respondent	
	Frequency	Percentage	Frequency	Percentage
16 to 20	32	26%	0	0%
21 to 30	89	71%	3	27%
31 to 40	4	3%	0	0%
41 and above	0	0%	8	73%
Total	125	100%	11	100%

As presented in table 2, student – respondents within the age range of 21 to 30 years old has the highest mark of 89. This translates to 71% of the total 125 student – respondents, it is followed by the group of respondents whose age bracket were in 16 to 20 years old, they come in second place with 32 marks and represents 26% of the total 125 student – respondents.

It is also presented in table 2, faculty – respondents within the age range of 41 and above has the highest frequency of 8. This translates to 73% of the total 11 faculty – respondents, it is followed by the group of respondents whose age bracket were in 21 to 30 years old, with 3 frequency and represents 27% of the total 11 faculty – respondents.

Year Level/Years in Service

Table 3 views the distribution of the respondents according to year level (Student)/Years in Service (Faculty).

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Table 3. *Distribution of the Respondents according to Year Levels*

Year Level	Frequency	Percentage
First Year	9	7%
Second Year	19	15%
Third Year	27	22%
Fourth Year	20	16%
Fifth Year	50	40%
Total	125	100%

Table 3 demonstrates that most of the student-respondents were drawn in fifth year with the numerical value of 50 or 40% of the total respondent's population. Meanwhile, the second highest population came from third year which is 27 or 22% of its total population. Next is fourth year with the population of 20 respondents or 16% of its total number. Lastly, are the second and first year with the number of 19 and 9, respectively or 15% and 7% of its total number of respondents.

As what table 4 reveals, most of the faculty-respondents are more than 5 years in their teaching experience. This states that 9 out 11 or 82% were more than 5 years in service. While only 2 or 18% are just new in the service which ranges 3 to 5 years. The total faculty- respondents are 11

Table 4. *Distribution of the Respondents according to Year Levels*

Years in Service	Frequency	Percentage
3 - 5	2	18%
More than 5 Years	9	82%
Total	11	100%

G-Suite Platform/Application Used

Table 5 shows the distribution of the respondents according to G-suite platform/application used.

Table 5. *Distribution of the Respondents according to G-Suite Platform/Application Used*

G-Suite Platform/ Application Used	Student - Respondent		Faculty - Respondent	
	Frequency	Percentage	Frequency	Percentage
Google Chrome	2	2%	0	0%
Goggle Classroom	74	59%	6	55%
Google Form	6	5%	0	0%
Gmail	3	2%	0	0%
Google Meet	7	6%	0	0%
Other Google Apps	33	26%	5	45%
Total	125	100%	11	100%

As what table 5 stipulates, on both respondents, students and faculty, google classroom is the most used G-suite platform. Its frequency is 74 or 59% of the total student-respondents while 6 or 55% of the total faculty-respondents. Next to the most frequency is the other google apps which is 33 or 26% for students-respondents while 5 or 45% for the faculty-respondents. Next are the google Meet, Google Form, Gmail and Google Chrome which are 7 or 6%, 6 or 5%, 3 or 2 % and 2 or 2% respectively of the total student- respondents population.

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There are countless advantages of utilizing Google Classroom as one of the Learning Management Systems (LSM) (Izenstark and Leahy, 2015).

Assessment Rating for G-Suite for Education Readiness (Faculty)/Midterm Examination Rating (Student)

Table 6. *Distribution of the Respondents according to Assessment Rating for G-Suite for Education Readiness (Faculty) and Midterm Examination Rating (Student)*

LMS Assessment Rating/Midterm Examination Rating	Student - Respondent		Faculty - Respondent	
	Frequency	Percentage	Frequency	Percentage
50 to 55	3	2%	0	0%
56 to 60	0	0%	0	0%
61 to 65	5	4%	0	0%
66 to 70	3	2%	0	0%
71 to 75	7	6%	0	0%
76 to 80	6	5%	0	0%
81 to 85	11	9%	0	0%
86 to 90	22	18%	0	0%
91 to 95	13	11%	7	64%
96 to 100	53	43%	4	36%
Total	125	100%	11	100%

Table 6 shows the distribution of the faculty-respondents according to Assessment Rating for G-Suite for Education Readiness. Table 6 likewise shows the rating assessment of faculty on the readiness in using G-suite for education. As shown, 7 has the rating of 91-95 which is 64% of its total population. While 36% or only 4 out of 11 has the rating of 96-100.

Samy et al. (2008) consider educators' acknowledgment as a significant factor in the compelling utilization of technology in the classroom.

Table 6 also shows that 53 students-respondents or 43% of its total population have the rating of 96 to 100 on their midterm examination using G-suite for education. While, next is 22 or 18% of student-respondents have the midterm rating of 86 to 90. Next in rank are those students gain mark ranging from 91 to 95, 13 of them with 11%. 6% or 7 student – respondents got a rating of 76 to 80. On the other hand, a total of 18 student-respondents or 15% have 50 to 75 midterm rating.

Lumadi et al, 2013 addresses the impact of e-learning on the academic performance of student-teachers. They conducted an experiment to determine if student- teacher taught using method of e-learning performed better that student-teacher taught using the traditional method of teaching and learning. Their findings suggest that e-learning has a significant influence on the performance of students as student-teachers taught using e-learning consistently perform better than student teacher taught using the traditional method.

How is the level of efficiency in using G-Suite for Education as learning modality for respondents be describe in terms of:

Table 7 shows the respondents efficiency level in using g-suite for education as learning modality. As for Student – Respondents, table 6 states that among the fifteen (15) criteria, five (5) have means that fall between 4.20-5.00 for Strongly Agree and 10 have means that fall between 3.40 to 4.19 for Agree. The table also shows that the top five (5) criteria with the highest means are: (1) G-suite is easy to use, (2) I can follow instructions well with the help of technology, (3) I can follow to the activities given, (4) Submission made easy with the use of G-suite application, and (5) Submission of works made it more convenient.

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Table 7. *Efficiency Level in the conduct of G-Suite for Education as Learning Modality assessed by the respondents*

Indicators	Student - Respondent		Faculty - Respondent		Combine - Respondent	
1.1 Instructions	**Mean**	**Verbal Interpretation**	**Mean**	**Verbal Interpretation**	**Mean**	**Verbal Interpretation**
Lessons discussions are clear.	3.95	Agree	4.22	Strongly Agree	4.09	Agree
G-suite is easy to use.	4.23	Strongly Agree	4.56	Strongly Agree	4.40	Strongly Agree
I can follow instructions well with the help of technology.	4.21	Strongly Agree	4.50	Strongly Agree	4.36	Strongly Agree
B. DELIVERY						
I felt more comfortable in interacting with my classmates and teacher/ students.	3.65	Agree	4.17	Agree	3.91	Agree
I easily created presentations by using technology.	4.14	Agree	4.50	Strongly Agree	4.32	Strongly Agree
G-suite application helped me become more aware of the lesson content.	3.99	Agree	4.44	Strongly Agree	4.22	Strongly Agree
C. LEARNING TASK						
G-suite helped students find the appropriate links needed.	4.14	Agree	4.44	Strongly Agree	4.29	Strongly Agree
I create notes and drafts to complete assignments.	3.92	Agree	4.33	Strongly Agree	4.13	Agree
I can follow to the activities given.	4.20	Strongly Agree	4.56	Strongly Agree	4.38	Strongly Agree
D. SUBMISSION						
I can submit my work on time.	4.09	Agree	4.44	Strongly Agree	4.27	Strongly Agree
Submission made easy with the use of G-suite application.	4.21	Strongly Agree	4.61	Strongly Agree	4.41	Strongly Agree
Submission of works made it more convenient.	4.25	Strongly Agree	4.50	Strongly Agree	4.38	Strongly Agree
E. ASSESSMENT						
Assessment made easy in G-suite application.	4.15	Agree	4.39	Strongly Agree	4.27	Strongly Agree
Application made assessment easy to measure.	4.17	Agree	4.28	Strongly Agree	4.23	Strongly Agree
Assessment are accessible for all students.	3.96	Agree	4.44	Strongly Agree	4.20	Strongly Agree

Legend of Scale

Weight	Limits	Verbal Interpretation
5	4.20-5.00	Strongly Agree
4	3.40-4.19	Agree
3	2.60-3.39	Neutral
2	1.80-2.59	Disagree
1	1.00-1.79	Strongly Disagree

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The criteria with the lowest means are: (1) I felt more comfortable in interacting with my classmates and teacher/ students, and (2) I create notes and drafts to complete assignments.

As table 7 shows for Faculty - Respondents, among the Fifteen (15) criteria, fourteen (14) have means that fall between 4.20-5.00 for Strongly Agree. The table also shows that the top 5 criteria with the highest means are: (1) Submission made easy with the use of G-suite application, (2) G-suite is easy to use, (3) I can follow to the activities given, (4) I easily created presentations by using technology, and (5) Submission of works made it more convenient. The criteria with the lowest means are: (1) I felt more comfortable in interacting with my classmates and teacher/ students, and (2) Lessons discussions are clear.

Table 7 shows for the combine data, twelve (12) criteria have means that falls in 4.20-5.00 for Strongly Agree and only three (3) have means that fall between 3.40 to 4.19 for Agree. The criteria that has the lowest mean is I felt more comfortable in interacting with my classmates and teacher/ students.

Clearly the data represents a sound level of efficiency as to the different criteria presented to the respondents. These platforms have been known to encourage learning, correspondence, and joint effort and Skype-based electronic coaching frameworks and adapting Learning Management System (LMS) have been discovered gainful for educators (Suk Hwang & Vrongistinos, 2012; Ucol- Ganiron, 2013).

Is there significant difference in the level of efficiency in using G-Suite for Education as learnin modality in terms of the above variable as assessed by the two groups of respondents?

Table 8 shows the significant difference in the level of efficiency in using G-suite for Education as learning modality in terms of the given variable as assessed by the two groups of respondents.

As presented in table 8, in terms of the instruction, the T computed value of -1.69 is lesser than the T Tabular (Critical) Value of 1.98. The decision is to accept the null hypothesis. By doing so therefore there is no significant difference on the perception of the respondents in terms of instruction in the utilization of the G-Suite for Education as the learning modality of instruction.

Table 8 . *T test result in the significance of difference in the level of efficiency in using G-Suite for education as learning modality as assessed respondents*

Variables	Degree of Freedom	Level of Significance	T Computed	T Tabular	Interpretation	Decision
Instruction	134	0.05	-1.69	1.98	Insignificant	Accept Ho
Delivery	134	0.05	-2.27	1.98	Insignificant	Accept Ho
Learning Task	134	0.05	-1.64	1.98	Insignificant	Accept Ho
Submission	134	0.05	-1.71	1.98	Insignificant	Accept Ho
Assessment	134	0.05	-1.40	1.98	Insignificant	Accept Ho

Legend of Interpretation

T Value	Interpretatioin	Decision
T Computed > T Critical	Significant	Reject Ho
T Computed < T Critical	Insignificant	Accept H0

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In terms of Delivery, table 8 shows that the T computed value of -2.27 is lesser than the Tabular (Critical) T value of 1.98. the decision is to accept the null hypothesis. This implies that there is no significant difference in the utilization of the G-Suite for Education as the learning modality of instruction in terms of the delivery by the two respondents.

Table 8 reflects that there is no significant in the utilization of the G-Suite for Education as the learning modality of instruction in terms of the Learning task as the T computed of -1.64 is lesser than the T tabular (critical) value of 1.98. the decision is to accept the null hypothesis.

In terms of submission, it shows that there is no significant difference in the utilization of the G-Suite for education as the learning modality of the two respondents. The T computed of -1.71 is lesser than the T tabular (critical) value of 1.98. the decision is to accept the null hypothesis.

Moreover, The T computed of -1.40 is lesser than the T tabular (critical) value of 1.98 in terms of Assessment. Thus, the decision is to accept the null hypothesis.

Generally, all variable assessed by the respondents has a result of lesser T Value (computed) than its T Tabular (critical) value which gives an interpretation of statistically insignificant per the decision rule in the test of significance using a T test.

How are the level of constraints in the conduct of G-Suite for Education as learning modality assessed by respondents the be describe in terms of:

Table 9 shows the level constraints assessed by the respondents in the conduct of G-suite for Education as learning modality.

Table 9 presents the criteria where constraints are encountered by faculty-respondents in the use of G-suite for education. Among the ten (10) criteria, five (5) has mean that fall 3.40 to 4.19 for Not Evident, and five (5) have mean that fall to 2.60 to 3.39 for Neutral. The top five (5) criterion are (1) Gadget used is just borrowed to others, (2) Only data internet is used which is limited, (3) Free data most of the time, (4) The gadget used is cellular phone only, and (5) There is no specific area or room to conduct online class. The criteria with lowest means are: (1) Gadgets available is low technology, (2) Internet connection is poor in the area, (3) Internet connection most of time encounters glitches, (4) The home environment is noisy when having online class, (5) Other chores are done while having online classes.

Table 9 shows for the combine data, five (5) criteria have means that falls in 3.40 to 4.19 for Not Evident and also five (5) have means that fall between 2.60 to 3.39 for Neutral. This implies that constraints were relatively not evident in the conduct of G-Suite for Education as the learning modality assessed by the respondents.

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Table 9. *Level of constraints in the conduct of G-Suite for Education as Learning Modality assessed by the respondents*

INDICATORS	Student - Respondent		Faculty - Respondent		Combine - Respondent	
A. KINDS OF GADGET USED	**Mean**	**Verbal Interpretation**	**Mean**	**Verbal Interpretation**	**Mean**	**Verbal Interpretation**
Gadgets available is low technology.	3.27	Neutral	3.33	Neutral	3.30	Neutral
The gadget used is cellular phone only.	3.27	Neutral	3.67	Not Evident	3.47	Not Evident
Gadget used is just borrowed to others.	3.82	Not Evident	4.11	Not Evident	3.97	Not Evident
B. INTERNMET CONNECTIVITY						
Internet connection is poor in the area.	2.78	Neutral	3.22	Neutral	3.00	Neutral
Internet connection most of time encounters glitches.	2.68	Neutral	3.22	Neutral	2.95	Neutral
Only data internet is used which is limited.	3.40	Evident	3.83	Not Evident	3.62	Neutral
Free data most of the time.	3.75	Not Evident	3.78	Not Evident	3.77	Not Evident
C. EXTERNAL FACTORS						
The home environment is noisy when having online class.	2.85	Neutral	3.33	Neutral	3.09	Neutral
There is no specific area or room to conduct online class.	3.29	Neutral	3.56	Not Evident	3.43	Not Evident
Other chores are done while having online classes.	2.94	Neutral	3.33	Neutral	3.14	Neutral

Legend of Scale

Weight	Limits	Verbal Interpretation
5	4.20-5.00	Strongly not evident
4	3.40-4.19	Not Evident
3	2.60-3.39	Neutral
2	1.80-2.59	Evident
1	1.00-1.79	Strongly Evident

Table 9 shows for the combine data, five (5) criteria have means that falls in 3.40 to 4.19 for Not Evident and also five (5) have means that fall between 2.60 to 3.39 for Neutral. This implies that constraints were relatively not evident in the conduct of G-Suite for Education as the learning modality assessed by the respondents.

Alipio,2020 states the consideration of the logistical limitations and well-being of a majority of students. He also states," Are learners in a less-economically developed country ready for e- learning?".

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Is there a significant difference in the level of constraints in the conduct of G-suite for Education as learning modality as assessed by two groups of respondents?

Table 10 shows the level of constraints in the conduct of G- suite for Education as learning modality. In terms of the kinds of gadget, the T computed value of -0.72 is lesser than the T tabular (critical) value of 1.98. Thus, the decision is to accept the null hypothesis.

Table 10. *T test result in the significance of difference in the level of constraints in using G-Suite for education as learning modality as assessed respondents*

Variables	Degree of Freedom	Level of Significance	T Computed	T Tabular	Interpretation	Decision
Kinds of Gadget	134	0.05	-0.72	1.98	Insignificant	Accept Ho
Internet connectivity	134	0.05	-1.03	1.98	Insignificant	Accept Ho
External factor	134	0.05	-0.81	1.98	Insignificant	Accept Ho

Legend of Interpretation

T Value	Interpretatioin	Decision
T Computed > T Critical	Significant	Reject Ho
T Computed < T Critical	Insignificant	Accept H0

In terms of the internet connectivity, the T computed value of -1.83 is lesser than the T tabular (critical) value of 1.98. Therefore, the decision is to accept the null hypothesis, and in terms of the external factor, the T computed value of -0.81 is lesser than the T tabular (critical) value of 1.98, resulting to the acceptance of the null hypothesis.

The Table reflects that all variable assessed by the respondents has a result of lesser T Value (computed) than its T Tabular (critical) value which gives an interpretation of statistically insignificant per the decision rule in the test of significance using a T test.

Is there a significant relationship between the level of efficiency and constraints in the conduct of the G-Suite for Education as learning modality assessed by two groups of respondents?

Table 11 shows the significant relationship assessed by the respondents in the conduct of G-suite for Education as learning modality.

Table 11. *Result of the Significant Relationship between the level of efficiency and constraints in the conduct of the G-Suite for Education as learning modality assessed by the respondents*

Indicators	Degree of freedom	Level of Significance	Pearson r	Critical Value	Level of Correlation	Interpretation	Decision
Efficiency	13	0.05	0.765	0.441	High Positive	significant	Reject Ho
Constraints	8	0.05	0.910	0.549	Very High Positive	significant	Reject Ho

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Scale of Correlation

Size of Correlation	Interpretation
0.90 to 1.00 (-0.90 to -1.00)	Very high Positive (Negative) Correlation
0.70 to 0.90 (-0.70 to -0.90)	High Positive (Negative) Correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate Positive (Negative) Correlation
0.30 to 0.50 (-0.30 to -0.50)	Low Positive (Negative) Correlation
0.00 to 0.30 (0.00 to -0.30)	Negligible Correlation

Legend of Interpretation

Variables	Interpretatioin	Decision
r Computed < r Critical	Insignificant	Accept H0
r Computed > r Critical	Significant	Reject Ho

Table 11 reflects that the level of correlation in terms of the efficiency in the conduct of G-Suite for education as learning modality is within 0.70 to 0.90 which is High positive and as for its significant relationships among the respondents, the r value of 0.765 is greater than the r critical value of 0.441 leading to the rejection of the null hypothesis. Consequently, as for the constraints assessed by the respondents in the conduct of G-Suite for Education as the learning modality the table shows the same outcome, the r value of 0.910 is greater than the r critical value of 0.549. the decision is to reject the null hypothesis. This implies that there is significant relationship between the efficiency and constraint assessed by the respondents in the conduct of G-Suite for education as the learning modality.

What program can be proposed to enhance the implementation of G-Suite for Education as Learning Management System?

A Learning Management System (LMS) Implementation Project Plan is proposed, it will enhance the employment of the learning management system of the school. It will help provide a framework and manageable attributes to the system.

G-Suite for Education as Learning Modality of Philippine School of Business Administration – Manila: A Learning Management System Implementation Proposal

Title: G-Suite for Education as Learning Management System in of Philippine School of Business Administration – Manila

COVID 19 pandemic shuts down almost all sorts of industries, and education is not spared from this catastrophe. In the Philippines alone, it caused more damages not only to the economy and welfare of its citizens, but its educational system as well. The Commission on Higher Education (CHED) in their memorandum order 4 series of 2020, entitled: Guidelines on the Implementation of Flexible Learning, the Higher Educational Institution (HEI) may utilize flexible learning, teaching and learning design modality system that would suffice in the delivery of instructions amidst the pandemic.

Placing the safety of the Philippine School of Business Administration's stake holders on its priority, the institution paved the way to adopting flexible learning for Academic Year 2020 – 2021. The School will use Google Suite for Education and Google Classroom as its Learning Management System (LMS). Online teaching and learning cover the entire spectrum of synchronous or real time communication between Instructors and students (i.e., lectures, webinars, teleconferences using video conference platforms) and asynchronous or non-real time communication between Instructors and students (i.e., emails, discussion boards, etc.).

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Objectives

With learning no longer restricted to the physical classroom, how is the Philippine School of Business Administration adopting a learning environment where in faculty and learners will have full access in a Learning Management System (LMS), the school wants to:

a) Create a strong Learning Management System in the Institution
b) Implement a user friendly yet economical LMS.
c) Ensure the efficiency of the Learning Management System (LMS) and take into consideration the imminent constraints that may arise upon the conduct of this system.

Activities:

1. G-Suite for Education as the Learning Management System aims to simplify the learning work flow and to provide an improved coordination to the School management in terms of real time collecting and reporting School data.
2. Learning management System (LMS) together with the LMS Lead trainer to conduct appropriate trainings to the faculty
3. G-Suite for Education as Learning Management System focuses the following major functions:

Study Material

a. Course Materials
b. Class presentation and notes
c. Lecture (recoded)

Scheduling

a. Synchronous
b. Asynchronous

Communication

a. Google Classroom Stream
b. Gmail (School Domain)
c. Assessment
d. Assignments
e. Quizzes
f. Major Examinations

Reporting

a. Grades
b. Attendance

4. Learning management System's Scope and Workaround

a. Learning Management System (LMS) Administrator alongside with the Registrar's office and Accounting department will be in charge for the entire enrollment process.

b. Learning Management System (LMS) Administrator will provide a domain email account for every enrolled student.

c. Registrar will generate a class list then provide to the faculty
d. Faculty will create the Google Classroom and provide every necessary class material.
e. Faculty will add their students in Google Classroom
f. Faculty to conduct actual class (Both Synchronous and Asynchronous)

5. G-Suite for Education is a Gadget and friendly user learning management System.

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Participants

Persons involved are:

a. Administrators
b. LMS Specialist
c. Faculty

Date of Implementation

1st Semester, SY 2021-2022

Source of Fund

School Fund

Budgetary Requirements

a. All materials needed for the trainings and webinars.
b. Meal and load allowance
c. Speakers' professional fees

Costing for this proposal will be deliberated in the management conference.

Summary of Findings

The salient findings of the study were the following:

1. Respondents' Profile in terms of:

1.1 Sex

The female student-respondents were 76% while male was 24%. In the same way, 55% of the faculty- respondents were female and 45% of them were male.

1.2 Age

Most of the student-respondents aged to 21-30 which is 71% of total number while those who belong to ages 16- 20 were 26% and those who were 31-40 were 3% only of its total population. Meanwhile, faculty-respondents were most aged to 41-60 which is 73% and 27% for those who were 20-40 years old.

1.3 Year Level/ Years in Service

Student-respondents were most in fifth year which is 40% of the total population while second is in the third year which is 22% and next is fourth year which is 16% while second year was 15% only and lastly the first year which is 7% and was the least number of respondents. Faculty respondents who teach more than five years were 82% of the total population while those who were just three to five years in service were only 18%.

1.4 G-Suite Platform/Application Used

Of all the application used, 59% of the student respondents used google classroom which was the highest number of the total population. Others used other forms of google apps which was 26% and others used google meet which is 6%, google form was 5% and goggle mail and google chrome which were 2% only of the total respondents. However, on the faculty- respondents, they mostly used to google chrome which was 55% and others were google classroom which is 45%.

1.5 Assessment Rating for G-Suite for Education Readiness (Faculty)/Midterm Examination Rating (Student)

Upon the Assessment made to faculty to measure their readiness in using G-suite for education, mostly, they got 90-95 rating which is 64% and the other 36% got the rating of 96-100.

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Students' midterm examination as rendered, mostly got 91-100 as rating which is 53% of the total population. Others got 81-90 rating which id 26%, 71-80 rating which is 12%, 5% were those who got 50-60 and lastly, 61-70 were 4%.

2. Level of efficiency in using G-suite for Education as learning modality for respondents he describes in terms of:
   2.1 Student-respondents

   Among the 15 criteria 4 had mean that fall between 4.20-5.00. Eleven (11) had mean that fall between 3.40 to 4.19. Top 4 criteria with the highest means were: (1) G-suite is easy to use, (2) I can follow instructions well with the help of technology, (3) Submission made easy with the use of G-suite application, and (4) Submission of works made it more convenient. Criteria with the lowest means were: (1) I felt more comfortable in interacting with my classmates and teacher/ students, and (2) I create notes and drafts to complete assignments.

   2.2 Faculty-Respondents

   Among the 15 criteria, 15 had mean that fell between 4.20-5.00. Top 6 criteria with the highest means were:

   (1) G-suite is easy to use, (2) I can follow instructions well with the help of technology, (3) I easily created presentations by using technology, (4) I can follow to the activities given, (5) Submission made easy with the use of G-suite application and (6) Submission of works made it more convenient. Criteria with the lowest means were: (1) I felt more comfortable in interacting with my classmates and teacher/ students, and (2) Lessons discussions are clear.
3. There is no significant difference in the level of efficiency in using G-suite for Education as learning modality in terms of the above variable as assessed by the two groups of respondents.
4. Level of constraints in the conduct of G-suite for Education as learning modality as assessed by the respondents be describe in terms of:
   4.1 Student-Respondents

   Among 11 criteria, 2 have mean that fall 4.19 to 3.40.9 had mean that fell between 3.39 to 2.60. Top 2 criteria were: (1) Gadget used is just borrowed to others and
   (2) Free data most of the time. Criteria with lowest means were: (1) Internet connection is poor in the area,
   (2) Internet connection most of time encounters glitches, (3) The home environment is noisy when having online class, (4) Other chores are done while having online classes.

   Faculty-Respondents Among 11 criteria, 1 has mean that fell 4.20 to 5.00, 5 have mean that fall to 3.40 to 4.19 and 5 have mean that fall between 3.39 to 2.60. Top 1 criteria are: (1) Gadget used is just borrowed to others. Criteria with lowest means are: (1) Gadgets available is low technology, (2) Internet connection is poor in the area,
   (3) Internet connection most of time encounters glitches, (4) There is no specific area or room to conduct online class and (5) Other chores are done while having online classes.
5. There is no significant difference in the level of constraints in the conduct of G-suite for Education as learning modality in terms of the above variable as assessed by the two groups of respondents.
6. There is significant relationship between the level of efficiency and constraints in the conduct of the G-Suite for Education as learning modality assessed by the two groups of respondents.
7. The result of this study is a proposed project plan to enhance the implementation of G-Suite for Education as Learning Management System.

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CONCLUSIONS

Based on the significant findings of the study, the following conclusions were established:

1. Majority of the student-respondents were female, aged 21-30, fifth year, used google classroom as G-suite platform and midterm ranged to 91-100. Whereas, majority of faculty- respondents were also female, aged 41-60, more than 5 years in teaching service, used google chrome as G-suite platform and had 90-95 assessment readiness ratings.
2. Majority of the student-respondents assessment on level of efficiency in using G-suite for education fell on the mean between 3.40-4.19 which rated agree with 10 entries. Whereas, faculty-respondents assessment was between 4.20- 5.00 which was rated strongly agree with 14 marks. Thus, faculty's rating is stronger that of the students.
3. There is no significant difference in the level of efficiency in using G-suite for Education as learning modality in terms of the above variable as assessed by the two groups of respondents.
4. The student-respondents assessment on the level of constraints in the use of G-suite was between the mean 2.60-
   3.39 which was interpreted as neutral. While faculty- respondents assessment was between the mean 3.40-4.19 and 2.60-3.39 which were interpreted as not evident and neutral, respectively. So, at some point, both respondents perceived same level of constraints.
5. There is no significant difference in the level of constraints in the conduct G-suite for Education as learning modality in terms of the above variable as assessed by the two groups of respondents. Therefore, same constraints were experiencing by the two respondents.
6. There is significant relationship between the level of efficiency and constraints in the conduct of the G-Suite for Education as learning modality as assessed by the two groups of respondents. Thus, the constraints don't affect the efficiency of the G-suite for education.
7. A Project Plan to Enhance Learning Management System is proposed.

Recommendation

Based on the conclusions and significant findings of the study, the following recommendations are offered:

School Administration

- Should embark on making G-Suite for Education as the school official Learning Management System (LMS).
- Should be aware of data privacy act when G-suite is implemented.
- Prepare workshops on delivering remote teaching through G- suite for education.
- Focus on the delivery of better, conducive, quality and high expectations educational system.

Learning Management System (LMS) Administrator

- Organize and implement seminars and training focusing on the implementation of G-suite for education.
- Proper evaluation and assessment should be applied to provide appropriate delivery for the programs and activities.
- Coordinate with E-learning specialist faculty of each year level and program for dissemination and program enhancement.
  Capacitate and up skill teachers continuously.

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