Volume 18 • June 2022
Print ISSN 2244-1824 · Online ISSN 2244-1816
DOI: https://doi.org/10.7719/irj.v18i1.827

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by AJA Registrars, Inc.

Frequency Level and Problems Encountered by the IBED Faculty in Utilizing the Google Workspace for Education

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Originality: 99% • Grammarly Score: 95% • Plagiarism: 0%

ABSTRACT

The majority of global sectors were affected by the pandemic caused by a Coronavirus outbreak. This includes the academic world, which consists of millions of enrolled students and active teachers who previously had regular classes in their institutions but were forced to stay home due to the pandemic. To continue the educational process, most countries implemented online classes. Both teaching and learning take place in this mode using electronic devices and different online platforms relatively new to the teaching-learning community. The study used a quantitative method where the researcher surveyed the IBEd Faculty at St. Mary's College of Baliuag to determine the frequency of educational technology tools such as Google Workspace for Education. A survey was conducted to evaluate the frequency of utilization and problems encountered by the Faculty in utilizing the Google Workspace Educational Tools. Results showed that the faculty were unfamiliar with some of the tools in Google Workspace and rarely used them in their classroom discussion. Teachers' responses revealed that they still need time to explore more of the different tools in Google Workspace and attend different pieces of training that will teach them how to use the tools. The results of the survey will provide valuable information in the design of professional training programs.

Keywords **—** Education, Educational Technology, Google Workspace for Education, Google Workspace Education Tools, Philippines

INTRODUCTION

It is understood that the use of ICT in education can increase access to learning opportunities. It can help enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reforms or better management of education systems (UNESCO-IS, 2009). And one of the requirements for teachers in the 21st century is being prepared to integrate instructional technology into teaching practices effectively (Yurtseven Avci et al., 2020).

During the Coronavirus disease (COVID-19) pandemic that affected the world, several countries have tried to integrate education and training into digital media (Moorhouse, 2020). Educators around the country were unexpectedly encouraged to switch from traditional teaching to online and distance learning (Akcil et al., 2021). The integration of online educational technology tools into education has been assumed as the latent of the new technological tools to transform an outmoded educational system. The main goal of introducing these in the field of education is to help schools and universities to continue their educational systems affected by the pandemic. The online educational technology tools integration in a school setting improves the teaching and learning process and motivates students to learn and engage in online discussion and feedback (Azlim et al., 2015).

Online educational technology involves virtual interaction and communication tools such as email, chat rooms, file sharing, and video conferences (Arnett, 2013). These facilities allow students to learn with greater control of time and place for learning purposes (Dzakiria, 2012), and teachers to deliver the teaching process virtually. Hence, students can interact, communicate and collaborate with learning materials, classmates and lecturers without time and place constraints. Synchronous educational technology, such as instant messaging and video conference tools, allow for real-time discussion where questions can be answered immediately (Dawley, 2007). In contrast, asynchronous educational technology, such as discussion forums and voice threads, provides students with more independent critical thinking space.

Despite this, some teachers remain unconfident in approaching their students with online educational technology as they are afraid that the technology would harm exam results and study habits. Kalinga (2010) also added that the

inadequacy of qualified teachers because of inadequate training and preparation in using educational technology had become an obstacle to implementing technology in different educational institutions during the pandemic. Other factors that have been identified as the factors in utilizing educational technology in teaching practices are teachers' computer self-proficiency, their teaching experience, accessibility of the educational technology, technical support in utilizing the educational technology, technology characteristics, and frequency level of utilizing educational tools (Guma et al., 2013).

One of the educational technology tools that were introduced to the world is Google Workspace for Education which offers different facilities that are very useful in any mode of online learning. Google Workspace, formerly known as G Suite software, is a collection of office and productivity tools that provide for greater integration of work processes Google Apps introduced it in 2006, and in 2016 it changed its name to G Suite. With additional capabilities added to its collaborative software and an effort to make the suite even more approachable for business teams, Google underwent another rebranding in October 2020 and became Google Workspace. To foster greater workplace cooperation and productivity, Google Workspace offers a variety of business tools that work together (Phipps, 2021). Google Workspace for Education is designed for schools and homeschools to collaborate, streamline instruction, and keep learning safely. They offered facilities to aid the teaching and learning process like Classroom, a video conference tool which is Google Meet, tools for documents –Google Docs, Slides, and Spreadsheet, and many more.

OBJECTIVES OF THE STUDY

In this study, the author aims to evaluate the frequency level and the problems encountered by the IBEd Faculty of St. Mary's College of Baliuag in utilizing the Google Workspace Education Tools in their teaching practices. An online survey using a structured questionnaire was conducted to achieve the goal of this research.

METHODOLOGY

Research Design

The researcher used quantitative methods to conduct this study. The researcher attempted to find answers to the aforementioned problem as well as to justify and satisfy the study's objectives.

According to Sis International Research (n.d.), quantitative research is a structured method of collecting and analyzing data obtained from various sources. Quantitative research uses computational, statistical, and mathematical tools to derive results. It is conclusive in its purpose because it attempts to quantify the problem and understand how prevalent it is by looking for results that can be projected to a larger population.

The researcher gathers information from current and potential customers through the distribution of an online questionnaire. A questionnaire was a modified concept from Tinio (2003) who created an evaluation tool to determine teachers' use of Information and Communication Technology (ICT) in Philippine Public High Schools and was distributed to the Integrated Basic Education Faculty members. The questionnaire was designed and validated to address research objectives concerning teachers' frequency levels and problems encountered using Google Workspace Education tools.

Respondents

The respondent of the study was the Faculty members of Integrated Basic Education at St. Mary's College of Baliuag. The chosen respondents are 47 Faculty members belonging to the eight subject areas – English, Filipino, Science, Mathematics, Christian Living, MAPEH, Araling Panlipunan, and the TLE/Computer Area. The researchers chose them because they are appropriate and applicable to the study.

Data Collection

The survey questionnaire was distributed online via Google forms per Subject Area. A permission letter accompanied the survey questionnaire to explain its purposes. The survey has been divided into sections: Section A: Frequency Level in utilizing the Google Workspace Education Tools, and Section B: Reason/s of the Teachers for not utilizing Google Workspace Education Tools in their teaching practices.

Instrumentation

The instrument used in this survey is a modified concept from an evaluation tool developed by Tinio (2003) that determined the teachers' Information and Communication Technology (ICT) utilization in Philippine Public High schools. The questionnaire elicited information on the teachers' utilization of Google Workspace Educational Tools in teaching and obstacles or problems encountered in utilizing Google Workspace Educational Tools.

RESULTS AND DISCUSSION

The results of the survey per Subject Area provided information indicating the frequency of utilization and the reason/s for not utilizing the Google Workspace Education Tools by the IBEd Faculty of St. Mary's College of Baliuag.

Teachers' level of Frequency in using Google Workspace Educational Tools

The frequency level of teachers' utilization in the Google Workspace Education tools was quantified using the following scales:

Rating Scale	Range	Descriptive Equivalent
4	3.50 – 4.00	Everyday
3	2.50 – 3.49	3-4 times per Week
2	1.50 – 2.49	1-2 Times per Week
1	1.00 – 1.49	Never used

The frequency count and weighted mean were used to describe the frequency level of teachers' utilization of Google Workspace Education Tools.

Table 1. Teachers' Level of Frequency in using Google Workspace Educational Tools – English Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	5	0	1	0	3.67	4
Google Meet	5	0	1	0	3.67	4
Google Slides	0	0	2	4	1.33	1
Google Forms	0	0	1	5	1.17	1
Google Docs	0	1	1	4	1.5	2
Google Sheets	0	1	0	5	1.33	1
Google Mail/Gmail	5	1	0	0	3.83	4
Google Drive	5	0	0	1	3.5	4
Google Chat	0	1	2	3	1.67	2
Google Calendar	1	1	2	2	2.17	2
Google Jamboard	0	0	1	5	1.17	1
Google Podcasts	0	1	0	5	1.33	1
Google Earth	0	1	0	5	1.33	1
Average Weighted Mean:					2.13	2

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table1 shows that Google Workspace Education tools such as Google Classroom, Google Meet, Google Mail/Gmail, and Google Drive were used every day, and the rest of the applications were not utilized at all. In general, the frequency level of English Area teachers in utilizing Google Workspace Education Tools in the teaching process was 1-2 times a week, as indicated by the average weighted mean value of 2.13.

Access to ICT infrastructure and resources in schools is a prerequisite for ICT integration in education (Plomp, Anderson, Law, & Quale, 2009). The availability and accessibility of ICT resources such as hardware, software, and so on are critical to the effective adoption and integration of ICT into school teaching. Teachers will not use ICT resources if they cannot access them. As a result, access to computers, updated software, and hardware are critical components of successful technology adoption and integration.)

Table 2. Teachers' Level of Frequency in using Google Workspace Educational Tools – Math Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	3	0	0	0	4	4
Google Meet	3	0	0	0	4	4
Google Slides	0	1	1	1	2	2
Google Forms	1	1	0	1	2.67	3
Google Docs	0	1	1	1	2	2
Google Sheets	0	1	0	2	1.67	2
Google Mail/Gmail	3	0	0	0	4	4
Google Drive	3	0	0	0	4	4
Google Chat	2	0	0	1	3	3
Google Calendar	2	0	0	1	3	3
Google Jamboard	1	1	0	1	2.67	3
Google Podcasts	0	0	1	2	1.33	1
Google Earth	0	1	1	1	2	2
Average Weighted Mean:					2.8	3

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table 2 shows that Google Workspace Education tools such as Google Classroom, Google Meet, Google Mail/Gmail, and Google Drive were used every day, and the rest of the applications were not utilized at all. In general, the frequency of Math Area teachers utilizing Google Workspace Education Tools in the teaching process was 3-4 times a week, as indicated by the average weighted mean value of 2.8.

Access to hardware and software is important, but so is the appropriate tools and programs to support teaching and learning (Tondeur, Valcke, & van Braak, 2008). "Having access to appropriate technology means that the affordances and constraints (Friedhoff, 2008, cited in Chen, 2010, p.3) of a technological tool must be carefully considered when the tool is incorporated into a lesson." Furthermore, access to ICT resources must be distinguished.

Table 3. Teachers' Level of Frequency in using Google Workspace Educational Tools – Science Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	3	0	0	0	4	4
Google Meet	2	1	0	0	3.67	4
Google Slides	1	1	0	1	2.67	3
Google Forms	0	1	1	1	2	2
Google Docs	0	2	1	0	2.67	3
Google Sheets	0	0	2	1	1.67	2
Google Mail/Gmail	3	0	0	0	4	4
Google Drive	2	1	0	0	3.67	4
Google Chat	0	0	1	2	1.33	1
Google Calendar	0	1	1	1	2	2
Google Jamboard	0	0	2	1	1.67	2
Google Podcasts	0	0	1	2	1.33	1
Google Earth	0	0	1	2	1.33	1
Average Weighted Mean:					2.46	2

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table 3 shows that Google Workspace Education Tools such as Google Classroom, Google Meet, Google Mail/Gmail, and Google Drive were used every day, and the rest of the applications were not utilized at all. In general, the frequency of Science Area teachers utilizing Google Workspace Education Tools in the teaching process was 1-2 times a week, as indicated by the average weighted mean value of 2.46.

Computer competence is the ability to handle a diverse range of computer applications for various purposes (van Braak et al., 2004). Teachers' computer competence is a major predictor of integrating ICT in teaching, according to Berner (2003), Na (1993), and Summers (1990), as cited in Bordbar (2010). According to the evidence, the majority of teachers who expressed a negative or neutral attitude toward the integration of ICT into teaching and learning processes lacked the knowledge and skills necessary to make "informed decisions" (Al Oteawi, 2002, p.253, as cited in Bordbar, 2010)

Table 4. Teachers' Level of Frequency in using Google Workspace Educational Tools – Filipino Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	1	1	0	0	3.5	4
Google Meet	2	0	0	0	4	4
Google Slides	0	0	0	2	1	1
Google Forms	0	0	0	2	1	1
Google Docs	0	0	0	2	1	1
Google Sheets	0	0	0	2	1	1
Google Mail/Gmail	0	1	1	0	2.5	3
Google Drive	0	0	0	2	2	2
Google Chat	0	1	0	1	2	2
Google Calendar	0	0	0	2	1	1
Google Jamboard	0	0	0	2	1	1
Google Podcasts	0	0	0	2	1	1
Google Earth	0	0	0	2	1	1
Average Weighted Mean:					1.69	2

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table 4 shows that Google Workspace Education tools such as Google Classroom and Google Meet were used every day, and the rest of the applications were not utilized at all. In general, the frequency level of Filipino Area teachers in utilizing Google Workspace Education Tools in the teaching process was 1-2 times a week, as indicated by the average weighted mean value of 1.69.

Many teachers do not understand how to incorporate educational technology into their curriculum (Hu & Garimella, 2014). According to Newhouse (2002), many teachers lack the necessary knowledge and skills. They were not enthusiastic about the changes and integration of supplementary learning that came with incorporating computers into their teaching practices.

Table 5. Teachers' Level of Frequency in using Google Workspace Educational Tools – MAPEH Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	4	0	0	0	4	4
Google Meet	3	1	0	0	3.75	4
Google Slides	0	1	0	3	1.5	2
Google Forms	0	1	0	3	1.5	2
Google Docs	0	2	0	2	2	2
Google Sheets	0	1	2	1	2	2
Google Mail/Gmail	4	0	0	0	4	4
Google Drive	2	1	1	0	3.25	3
Google Chat	0	0	1	3	1.25	1
Google Calendar	0	1	1	2	1.75	2
Google Jamboard	0	0	0	4	1	1
Google Podcasts	0	0	0	4	1	1
Google Earth	0	0	0	4	1	1
Average Weighted Mean:					2.15	2

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table 5 shows that Google Workspace Education tools such as Google Classroom, Google Meet, and Google Mail/GMail were used daily, and the rest of the applications were not utilized at all. In general,

the frequency level of MAPEH Area teachers in utilizing Google Workspace Education Tools in the teaching process was 1-2 times a week, as indicated by the average weighted mean value of 2.15.

The lack of appropriate software discourages the use of ICT in education. According to Goktas and Yildrim's (2009) research, one of the barriers to integrating ICT in the teaching and learning process is a lack of software. Inadequate appropriate and practical software in terms of application cannot enrich teachers' learning with technology. They will most likely use the basic application software to help the students perform the task required in the subject skills.

Table 6. Teachers' Level of Frequency in using Google Workspace Educational Tools – Christian Living Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	3	1	0	0	3.75	4
Google Meet	3	1	0	0	3.75	4
Google Slides	0	0	1	3	1.25	1
Google Forms	0	0	1	3	1.25	1
Google Docs	0	0	1	3	1.25	1
Google Sheets	0	0	1	3	1.25	1
Google Mail/Gmail	4	0	0	0	4	4
Google Drive	2	1	0	1	3	3
Google Chat	1	0	0	3	1.75	2
Google Calendar	0	1	0	3	1.5	2
Google Jamboard	0	0	0	4	1	1
Google Podcasts	0	0	0	4	1	1
Google Earth	0	0	0	4	1	1
Average Weighted Mean:					1.98	2

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table 6 shows that Google Workspace Education tools such as Google Classroom, Google Meet, and Google Mail/GMail were used daily, and the rest of the applications were not utilized at all. In general, the frequency level of Christian Living Area teachers in utilizing Google Workspace

Education Tools in the teaching process was 1-2 times a week, as indicated by the average weighted mean value of 1.98. These teachers typically use ICT only to present teaching materials. They rarely demonstrate the ability to use a variety of complex computer applications.

Table 7. Teachers' Level of Frequency in using Google Workspace Educational Tools – TLE/Computer Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	4	1	0	0	3.8	4
Google Meet	5	0	0	0	4	4
Google Slides	0	1	0	4	1.4	1
Google Forms	2	1	0	2	2.6	3
Google Docs	1	1	1	2	2.2	2
Google Sheets	0	0	2	3	1.4	1
Google Mail/Gmail	5	0	0	0	4	4
Google Drive	2	1	1	1	2.8	3
Google Chat	1	1	0	3	2	2
Google Calendar	2	1	0	2	2.6	3
Google Jamboard	0	0	0	5	1	1
Google Podcasts	0	0	0	5	1	1
Google Earth	0	1	0	4	1.4	1
Average Weighted Mean:					2.32	2

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table 7 shows that Google Workspace Education tools such as Google Classroom, Google Meet, and Google Mail/GMail were used every day, and the rest of the applications were not utilized at all. In general, the frequency level of TLE/Computer Area teachers in utilizing Google Workspace Education Tools in the teaching process was 1-2 times a week, as indicated by the average weighted mean value of 2.32.

They rarely use ICTs to create collaborative projects among students about the subject they are learning (Dwiono et al., 2018). Furthermore, teachers never use many devices and tools to create innovative teaching materials, such as the production of questionnaires, communication, and setting up calendars.

Table 8. Teachers' Level of Frequency in using Google Workspace Educational Tools-Araling Panlipunan Area

Google Workspace for Education Tools	4	3	2	1	WM	Interpretation
Google Classroom	3	1	0	0	3.75	4
Google Meet	3	1	0	0	3.75	4
Google Slides	0	0	1	3	1.25	1
Google Forms	1	1	0	2	2.25	2
Google Docs	1	0	1	2	2	2
Google Sheets	0	0	1	3	1.25	1
Google Mail/Gmail	4	0	0	0	4	4
Google Drive	2	1	0	1	3	3
Google Chat	0	0	1	3	1.25	1
Google Calendar	1	0	1	2	2	2
Google Jamboard	0	0	1	3	1.25	1
Google Podcasts	0	0	1	3	1.25	1
Google Earth	0	0	1	3	1.25	1
Average Weighted Mean:					2.17	2

Legend: 3.5-4.0 = Everyday (4) 1.5-2.49 = 1-2 times per Week (2)
2.5-3.49 = 3-4 times per Week (3) 1.0-1.49 = Never used (1)

Analysis of the data in Table 8 shows that Google Workspace Education tools such as Google Classroom, Google Meet, and Google Mail/GMail were used every day, and the rest of the applications were not utilized at all. In general, the frequency level of Araling Panlipunan Area teachers in utilizing Google Workspace Education Tools in the teaching process was 1-2 times a week, as indicated by the average weighted mean value of 2.17.

Reason/s of the IBEd Faculty for not using the Google Workspace Education Tools:

The MAPEH Area stated that they used other online applications for instruction delivery, and the school has its own Learning Management system.

The Mathematics Department stated that they did not use the Google Workspace Tools at the Kinder level and are not fully aware of the benefits of using them in my online classroom. To be honest, I had no idea such apps existed.

The Filipino community is still unfamiliar with the various tools integrated into Google Workspace Education Tools.

The Science Area is not well-versed in its application; some students use it for paperwork and to receive and transmit information for schoolwork.

The English Area stated that they cannot fully utilize all of the Google Workspace Educational Tools due to limited availability.

Because we need to maximize the use of the school's LMS, the Christian Living Area teachers are also unfamiliar, and features are not used.

The TLE Area is not yet acquainted with it; they have their tools for discussion but are not acquainted with it. And the Araling Panlipunan Area teachers stated that the online tools they use in activities are not appropriate for the lower grade level, and they do not use tools with which they are unfamiliar.

According to the results, Google Mail, Google Classroom, Google Meet, and Google Drive were highly rated among the Workspace for Education Tools because these are mainly used for synchronous classes and communication between students and teachers. According to the Asian Development Bank (2003), the extensive use of technology increases the quality of educational opportunities offered, making technological knowledge possible through borderless and boundless accessibility of software resources.

Our participants are not using Workspace Education tools because they use different technologies for student engagement and activity submission, are unfamiliar with other tools, and have other learning management systems. This finding is similar to that of Glowatz and O'Brien's (2017) study, which discovered that discussion forums in the form of a learning management system were widely used, and that student engagement was the driving force behind the use of various technologies.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn (1) Google Meet, Classroom, and Mail are frequently Google Workspace Education Tools used by the Faculty in their teaching and communicating process, and (2) The main problem encountered in utilizing the tools was the teachers' lack of familiarity with the various tools integrated into Google Workspace.

RECOMMENDATION

Teachers must attend seminars about the various tools integrated into Google Workspace and learn how to use them effectively in the teaching process to make better use of Google Workspace Education tools. Professional development for teachers is critical to successfully integrating of computers into classroom instruction. ICT-related training programs help teachers improve their computer skills (Bauer & Kenton, 2005; Franklin, 2007; Wozney et al., 2006), influence teachers' attitudes toward computers (Keengwe & Onchwari, 2008), and help teachers reorganize their technical tasks and how new technology tools affect student learning (Plair, 2008).

TRANSLATIONAL RESEARCH

This study will provide invaluable information to school administrators and policymakers about the nature of educational technology's contribution to the teaching-learning process. Because teachers' skills and perceptions are critical to how effectively an innovation is implemented, it is critical to assess how teachers perceive it and its efficacy as a tool for improved teaching and learning. It is also hoped that this study will contribute to the growing knowledge base and generation of the twenty-first century regarding educational technology in education.

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