Google Tools for Lessons: Its Impact on the Engagement and Learning Outcomes College Students of the Philippine College of Science and Technology

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Abstract:- The researchers studied the impact of Google tools for lesson creation on the engagement and learning outcomes of selected third-year college students at the Philippine College of Science and Technology. The researchers focused on their data gathering using a survey questionnaire. The results of the study indicate that the use of Google Tools in lesson creation is prevalent among the respondents' teachers, with Google Drive being the most used tool. Additionally, it was found that the use of these tools positively affects students' engagement in the classroom and improves their learning outcomes. However, the study also identified various challenges encountered by the students in using Google tools, such as privacy concerns, limited online function, lack of internet connection, insufficient equipment, and lack of technical support. These challenges have been found to impact their engagement in the classroom and their learning outcomes. Overall, the study suggests that the use of Google tools in lesson creation can be an effective means of enhancing student engagement and learning outcomes. However, educators need to address the challenges associated with using these tools to ensure that all students can benefit from their use. For the recommendations, teachers should continue to viii use Google tools in their lesson creation as it has been found to be effective in enhancing student engagement and improving learning outcomes and they should ensure that they provide adequate technical support to their students when using Google tools, and address any issues related to privacy concerns, limited online function, lack of internet connection, insufficient equipment, and other challenges that students may encounter. Teachers should also regularly assess the effectiveness of their use of Google tools in lesson creation through student feedback and performance data and adjust their approach as necessary to maximize the impact on student learning.

Keywords:- *Google Tools, Lesson-Creation, Engagement, Learning Outcomes.*

I. INTRODUCTION

In the current digital age, the use of technology has become an integral part of the educational system. It has become increasingly prevalent in education, with the advent of various digital tools and resources that have been developed to facilitate learning. The introduction of new and innovative technologies has enabled educators to create more engaging and interactive lessons for their students. The use of technology in education has become an important factor in the learning process.

One of the most widely used tools is Google, which provides a range of tools such as Google Docs, Google Sheets, and Google Slides, Google Classroom, among others. These tools have been designed to enable collaborative learning, facilitate communication, and help educators create, share, and collaborate on documents, presentations, and spreadsheets in real time.

In the United States, these tools are frequently used by individuals and organizations for various purposes, and Google Classroom has become an essential platform for remote learning during the COVID-19 pandemic. In India, Google tools are also increasingly popular, particularly in the education sector, with Google Classroom becoming a popular platform for schools and universities to conduct online classes and manage assignments. In the United Kingdom, Google tools are widely used in education, with Google Classroom being a crucial platform for remote learning, and Google Drive and Google Docs being popular among professionals for collaboration and productivity. It shows that Google tools have become increasingly important globally, with many countries using them for personal, educational, and professional purposes.

In recent years, there has been a growing interest in the use of Google tools in lesson creation, as educators recognize the benefits that these tools can offer in terms of engagement and learning outcomes. According to a study by Khan and Gul (2021), the use of Google Docs and Google Slides in teaching enhanced students' critical thinking, collaborative learning, and communication skills. According to a study by Haddad and Jurich (2019), the use of digital tools such as Google Classroom, Kahoot, and Quizlet in

teaching increased students' engagement, motivation, and participation in the learning process. However, technical problems like inadequate connectivity, incompatible devices, and system crashes were some of the obstacles to using the Google Classroom. (Dabbagh & Bannan-Ritland, 2005).

Therefore, this study aims to investigate the impact of utilizing Google tools in lesson creation on the engagement and learning outcomes of selected college students in the Philippine College of Science and Technology. Specifically, the study seeks to determine the extent to which the use of Google tools in lesson creation impacts student engagement, student learning outcomes, and the perceptions of students regarding the use of Google tools in lesson creation.

This study is important because it will provide empirical evidence regarding the impact of utilizing Google tools in lesson creation on engagement and learning outcomes, which can inform educators and policymakers in designing effective technology-enhanced learning environments. The findings of this study may also contribute to the body of knowledge on the use of digital tools in education, particularly in the context of higher education in the Philippines.

The Philippine College of Science and Technology is a suitable context for this study because it is a higher education institution that emphasizes technology-enhanced learning. The college provides students with access to various digital tools and resources, including Google tools, to support their learning. This study can help determine whether the use of Google tools in lesson creation at the Philippine College of Science and Technology has a significant impact on student engagement and learning outcomes.

The findings of this study may also have practical implications for educators who are looking for effective ways to integrate technology into their teaching practice. By identifying the specific Google tools and practices that have the greatest impact on engagement and learning outcomes, educators can make informed decisions about how to use these tools to enhance their teaching and improve student learning.

➢ *Significance of the Study*
The study on the Google Tools in Lesson-Creation: their impact on the engagement and learning outcomes among selected Third Year College Students in the Philippine College of Science and Technology is important for various stakeholders in education.

The findings of the study are expected to offer means for the improvement of the students as better individuals in school, in the community, and in the worldwide nation.

II. REVIEW OF LITERATURE

The utilization of Google Tools in education is driven by a broader global shift towards technology integration. This research serves to address the specific needs and challenges faced by the PhilCST and its students within this digital transformation. By investigating the impact of Google tools in the local education context, ensuring that students have the best possible resources for their academic journey. The findings may also provide valuable insights for other institutions in the region looking to enhance their educational technology initiatives and adapt to the evolving landscape of higher education.

Google Classroom and WhatsApp serve distinct purposes in the realm of communication and education. Google Classroom is an educational platform tailored for teachers and students, providing tools for managing assignments, sharing course materials, and facilitating structured educational interactions. It seamlessly integrates with Google and upholds educational privacy and security standards.

According to the study's objectives, these two apps—Google Classroom and WhatsApp—will be used to examine how utilizing them affects instructional activities. According to the results, Google Classroom influenced learning activities while WhatsApp had none. There was no observable difference in instructional activities when Google Classroom and WhatsApp were used together.

➢ *The Best Features for Busy Teachers*
By launching Google for Educators, which collects some of the search engine's most helpful features in one location, Google has made it simpler. A free Google tool will make your courses more engaging and your projects more organized, whether you're teaching Spanish, history studies, arithmetic, or music. The engaging, educational website provides videos and step-by-step visual tours to assist you in setting up. Some of the site's most helpful features such as Google Search, Google CS First, Google Keep, Google Drive Google Sites, Google Maps, Google Classroom, YouTube, and other Additional Google Resources. Teachers and students will remain motivated, creative, and organized by using these Google tools for Education resources, whether they are dated or newer and improved.

Education is changing at a faster rate than at any other time in recent memory. Educators and parents are increasingly aware that today's curriculum must evolve to reflect the realities of the future. Aside from tools and technology, students must develop new abilities to tackle complicated situations, cooperate effectively, and express ideas in creative ways. Google for Education worked with a worldwide team of researchers and analysts to examine evidence-based changes in the way students are taught in the classroom to better understand these developments.

> *Salient Features of Google*

Google provides an enormous number of pre-made templates, including RSVP, party invitations, event feedback, and course reviews. If you wish to construct your own Google form, you should utilize the blank template. Many different types of questions, such as checkboxes, dropdown menus, multiple-choice grids, checkboxes, paragraph responses, and multiple-choice questions, can be included in a Google Form. Images and videos can be readily incorporated into a form, which is an excellent way to assess what pupils learn and think after viewing media. You can also include an upload button for students to upload their work.

Google Classroom is useful as a Learning Management System since it assists students in making their assignments or work easier. By using the LMS to share class materials, all students, whether in class or learning remotely, will have access to the lesson's objectives, activities, and resources. To exchange textbooks, online software solutions might be employed. An LMS aids in the construction of consistent learning environments by centralizing content. It enables straightforward reporting, tracking, and engagement enhancement. It will be more powerful and engaging once these tools are executed effectively in lesson creation.

The study of Google Classroom, particularly in poor nations, has made it necessary to better analyze the tool's efficacy. (Azhar et al., 2018). Examining Google Classroom's benefits is a great chance for the researcher to show the respondents how easy it is to use the software to assist them in their classroom management chores. The study investigated the respondents' perception of the use of the application in terms of its acceptability and which factor significantly affected the respondents' consistency of use. Google Classroom has the advantages of facilitating communication, posting materials and assignments, and encouraging paperless classrooms. Investigating the benefits of Google Classroom provides a fantastic opportunity for the researcher to allow the respondents experience the ease of utilizing the technology to assist them with their classroom management chores. With the benefits of using Google Classroom to communicate, post materials and assignments, and promote paperless classrooms, the study investigated respondents' perceptions of the application's usability and which factors significantly influenced respondents' consistency of use.

One of the results of Subandi's (2018) study about Google Classroom covered the support for the system for paperless instruction. It offers assistance resources like Gmail, Drive, and Docs through its distinctive design for professors and students. Making document generation, viewing, editing, and transfer paperless in the process. It will really make a big improvement if the user will remember to perform specified duties and be more creative by editing, adding accounts, viewing, and so on.

According to Mafa and Govender (2017) The app's accessibility is also emphasized, claiming that it can be downloaded for free and placed on a mobile device to enable quick learning while on the go. In other words, this program may be used by both teachers and students and is accessible from any mobile device at any time. As a result, it is a platform that enables educators to create an online classroom where students are free to interact with both their classmates and teachers.

Warschauer (2005) believes for today's learners, this legal foundation created options that are unbounded, instantaneous, and endless. It simply makes sense for their learning environment to correspond to their daily lives. Computers and the Internet are essential instruments for learning and knowledge production in the 21st century, just as pens and pencils predominated as knowledge and learning tools for a long portion of the 20th century. Computers and the internet play a vital part in our lives since they allow us to address numerous problems quickly and easily. Taking everything into account, we must utilize computers appropriately in our daily tasks. Technology also allows students to learn at their own pace, which helps them feel more at ease with the material and the learning environment in general.

Lessons in the classroom combined with activities on computers or mobile devices both inside and outside the classroom enable students to read instructions, assimilate information, and finish their work at their own pace. This self-directed learning also allows teachers to concentrate their efforts on students who may require further instruction or assistance.

III. DATA AND METHODOLOGY

A descriptive research design and quantitative research approach was used to complete the aims of the study. Descriptive research is fact-gathering that involves proper interpretation, documentation, and analysis of the current situation. In this type of research design, the researcher observes the phenomena as they occur naturally, and no external variables are introduced.

The researchers described, interpreted, and analyzed the specific Google tools that are used by the teachers of the respondents in their lesson creation and the challenges encountered by the respondents with the use of specific Google tools.

Table 1 *Specific Google tools used by the teachers of the respondents in their lesson creation.*

Google Tools	Frequency(f)	Percentage (%)	Rank
Google Slides	21	46.67%	5
Google Forms	13	28.89%	8
Google Docs	32	71.11%	4
Google Meet	40	88.89%	2
Google Classroom	12	26.67%	9

Google Sites	14	31.11%	7
Google Drive	45	100%	1
Google Sheets	8	17.78%	11
Gmail	39	86.67%	3
Google Drawing	3	6.67%	14
Google Translate	16	35.56%	6
Google Calendar	4	8.89%	13
Google Scholar	7	15.56%	12
Google Maps	11	24.44%	10
Others (Please Specify):	0	0	-

Based on the data gathered and presented in Table 1, "Google Drive" was ranked as the first Google tool used by the respondents' teachers in their lesson creation with a frequency of 45 (100%). It was evident that PhilCST students were using this Google tool since they still engaged in blended learning, and Google Drive is one of the required Google tools where students upload or save their outputs prior to passing each link in the school's Learning Management System (LMS).

It was also notable that most respondents' teachers were utilizing "Google Meet" as one of the Google tools in their lesson creation, which was ranked second with a frequency of 40 (88.89%). Because face-to-face classes are not yet fully implemented, most teachers in PhilCST continue to use this Google tool to meet with their students. "Gmail" with a frequency of 39 (86.67%) ranked third as it is the type of Google tool where the personal account was made. It can be relied on before accessing the two mentioned above Google tools (Google Drive and Google Meet).

Based on the data, it can be assumed that, while some Google tools are already being used by PhilCST teachers in their lesson creation, there are still Google tools that need to be introduced to them thoroughly to help them make their lesson creation easier and more technology-based that fits in this generation.

➢ *Roles of the respondent's digital literacy and previous experience with Google tools in the student's engagement and learning outcomes.*

Table 2 shows the roles of the respondent's digital literacy and previous experience with Google tools in the student's engagement and learning outcomes the data in Table 2 reveals that the indicator *"I can easily access information"* was ranked first when considering how the respondent's digital literacy and previous experience with google tools affected the student's engagement and learning outcomes, with a frequency of 38 (84.44%). it becomes clear from their prior experience with Google tools and their level of digital literacy that one of its advantages—the ease of information access—contributes to their engagement in class and has a positive impact on their learning outcomes. the indicator *"I can make projects, presentations, and meetings using Google tools"* came in second rank with a frequency of 38 (84.44%). and the indicator *"I can easily communicate*

and collaborate with others through digital tools" which has a frequency of 35 (77.78%) ranks third. These findings indicate that selected third-year college students' digital literacy and previous experience with Google tools assist them in being more engaged and responsible in the learning process, as well as being able to collaborate and communicate effectively, which has an advantageous effect on their learning outcomes.

The findings revealed and proved how the digital literacy of the selected third--year students and their previous experience with Google tools assist them in being more engaged in school activities but some other Google tools should be utilized more in order for the students to express their ideas and perspectives in new engaging ways and enjoy more the lesson with the use of these Google tools.

Table 2 Roles of the respondent's digital literacy and previous experience with Google tools in the student's engagement and learning outcomes.

Indicators	(f)	(%)	Rank
I can easily have access to information.	38	84.44%	1
I can communicate and collaborate easily with others through digital tools.	35	77.78%	3
I can analyze and evaluate information more effectively, and make informed decisions.	21	46.67%	8
I notice that I can express my ideas and perspectives in new and engaging ways.	19	42.22%	10
I tend to be more creative.	27	60%	5
I become more self-directed in learning with the use of online resources like tutorials and videos.	23	51.11%	7
I can make projects, presentations, and meetings using Google Tools.	36	80%	2
I can schedule events and get reminders about upcoming activities.	20	44.44%	9
I am enjoying the lesson more when Google tools are involved.	17	37.78%	11
I can organize my schoolwork through Google tools.	30	66.67%	4
I can actively participate in class when Google tools are involved.	24	53.33%	6
Others (Please Specify):	0	0	-

➢ *Challenges encountered by the respondents with the use of Specific Google tools and their frequency.*

Table 3 reveals the challenges encountered by the respondents with the use of Specific Google tools and their frequency. data revealed that all of the eight (8) indicators were rated as Occasionally/Sometimes (O/S) with the indicator: Data suggest that the selected third-year college students were concerned occasionally or sometimes about

using Google tools, with challenges mostly regarding their privacy and the offline capabilities of these tools.

The overall average weighted mean of 3.15, on the other hand, reveals that respondents 'Occasionally/Sometimes' experience or encounter major problems when it comes to using Google tools. It indicates that the respondents' digital literacy and previous experience with Google tools play important roles in their positive engagement and learning outcomes.

These findings revealed that, despite respondents' digital literacy and previous experience with Google tools, expressing their ideas and perspectives in new and

engaging ways, as well as enjoying the lesson more when Google tools were involved remains at the very least. It could be because some students are still adjusting to the changes brought about by blended learning and prefer traditional methods of learning.

These findings revealed and proved how the digital literacy of the selected third-year students and their previous experience with Google tools actually assist them in being more engaged in school activities but some other Google tools should be utilized more in order for the students to express their ideas and perspectives in new engaging ways and enjoy more the lesson with the use of these google tools.

Table 3 Challenges encountered by the respondents with the use of specific Google tools and their frequency.

Indicators	ET 5	AET 4	O/S 3	AN 2	N 1	Average Weighted Mean	Descriptive Interpretation
Limited offline functions (Limited functions in offline because you have to be connected to the internet first before you can use some)	8	10	23	3	2	3.42	Occasionally/ Sometimes
Lack of technical support (No guidance when using some)	5	4	20	10	6	2.82	Occasionally/ Sometimes
Difficulty in account management (Need to create account first before you can start using it)	5	10	19	8	3	3.13	Occasionally/ Sometimes
Student misusing Google Tools.	2	9	23	9	2	3	Occasionally/ Sometimes
Lack of internet connection.	5	13	19	6	2	3.29	Occasionally/ Sometimes
Insufficient Equipment.	3	12	19	5	6	3.02	Occasionally/ Sometimes
Privacy concern	8	15	15	4	3	3.47	Occasionally/ Sometimes
Costly	3	10	22	6	4	3.04	Occasionally/ Sometimes
Others (Please Specify):	0	0	0	0	0	-	-
Overall Average Weighted Mean						3.15	Occasionally/ Sometimes
No. of Respondents						45	

➢ *Proposed Plan*

This action plan tends to suggest ways to enhance the engagement and learning outcomes of the students with the use of Google tools in lesson creation at the Philippine College of Science and Technology (PhilCST) in different areas of concern regarding the use of Google tools.

The areas of concern such as the limited use of specific Google tools, students not enjoying the lesson when Google tools are being used, and the challenges encountered by using the Google tools. The researchers came up with the proposed plan to be able to resolve the areas of concern which are the main concern of the study. The increase in the use of Google tools such as Google Scholar, Google Calendar, and Google Drawing; more effective innovative approaches to teaching and learning; and the increase in the use of Google tools and improved students' engagement.

Table 4

Proposed Action Plan to Enhance the Engagement and Learning Outcomes of the Students with the Use of Google Tools in Lesson-Creation in Philippine College of Science and Technology (PhilCST)

ACTION PLAN
A.Y. 2022-2023

AREAS OF CONCERN	PRESENT SITUATION	TARGET OBJECTIVES	STRATEGY	PEOPLE INVOLVED	TIME FRAME	EXPECTED OUTPUT
The limited use of specific Google tools such as Google Scholar, Google Calendar, and Google Drawing.	Most teachers at PhilCST were not utilizing these google tools in their lesson-creation.	To strengthen these tools and to maximize their utilization in contributing a positive impact to the engagement and learning outcomes of the students.	Raising awareness about these google tools highlighting their benefits and features and providing training to the teachers to broaden their knowledge about integrating these tools in their lesson-creation.	The Philippine College of Science and Technology Institution	The time frame for the action plan may be divided into phases. The initial phase teaching and learning at PhilCST using Google tools that will make the lesson more enjoyable.	An increase in the use of Google Scholar, Google Calendar, and Google Drawing maximizing their utilization for the teacher's lesson-creation.
Students are not much enjoying the lesson when Google tools are being used.	Most students are enjoy using Google tools but barely enjoying the lesson when these tools are involved.	To make the students enjoy the lesson when Google tools are being used which can contribute a positive impact to the engagement and learning outcomes of the students.	Teachers may communicate the objectives and demonstrate how the tools enhance learning. Encourage collaboration, and incorporate gamification elements, and utilize multimedia content. Personalize the learning experience and allocate time for reflection and feedback.	Administration, teachers, and students. External consultants or experts or integration of Google tools, may also be involved in monitoring of student's progress, and developing and implementing the training plan.	The actual tools, the actual training, which may take 6-12 months.	More effective and innovative approach to teaching and learning at PhilCST using Google tools that will make the lesson more enjoyable.
Challenges encountered by the students using Google tools like privacy concern, limited offline functions, and lack of internet connection.	Students are having doubts in using Google tools because of privacy concern, limited offline functions, and lack of internet connection.	To guide the students in correct way of using google tools which can protect their privacy, maximize the functions of these tools even offline and provide them a stable connection.	Providing access to Google tools for all teachers and students and create a strong privacy protection, monitor student progress, provide a strong internet connection and continuously improve the use of Google tools.			An increase in the use of Google tools in without concerns and improve students' engagement and earning outcomes, and a shift towards a culture of innovation and collaboration among teachers and students.

IV. CONCLUSION

The problems focused on the specific Google tools that are used by the teachers of the respondents in their lesson creation, the roles of the respondents' digital literacy and previous experience with Google tools in their engagement and learning outcomes, the challenges in the use of Google Tools and their frequency, and an intended action plan that can be developed to maximize the engagement and learning outcomes with the use of the Google tools.

The following conclusions were drawn: It shows evidence that using these Google tools in lesson creation is effective and advantageous in enhancing students' engagement and improving learning outcomes. According to the data gathered, the respondents 'Occasionally/Sometimes' experience or encounter significant challenges like privacy concerns, limited online function, lack of internet connection, insufficient equipment, lack of technical support, etc. when it comes to using Google tools which influence their engagement in the classroom and their learning outcomes electives of the course.

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