

LEARNERS' COMPUTER SKILLS THROUGH GOOGLE CLASSROOM

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ABSTRACT

The primary purpose of this study was to find out if Google Classroom can improve Grade 6 student's skills in computer education and academic performance. Furthermore, this study investigated the result of the performance of the Grade 6 pupils using Google Classroom.

Keywords: google class, academic, technology, integration

INTRODUCTION

A virtual classroom is an online classroom that allows participants to communicate with one another, view presentations or videos, interact with other participants, and engage with resources in work groups. The very recent addition to the virtual classroom is Google Classroom. Google announced Classroom in May 2014 as a new tool in Google Apps for Education. The purpose of this study is to report the overall view of Google classroom adopted in the different classes. This paper presents brief features of Google Classroom.

Students' lives today are filled with technology that gives them access to information and resources 24 hours a day 7 days a week (24/7). Students are able to create multimedia content and immediately share it with the world and participate in social networks where people from all over the world share ideas, collaborate, and learn new things. Outside of the classroom, students have the freedom to pursue their passions in their own way and at their own pace.

REPUBLIC ACT NO. 10844 known as the "Department of Information And Communications Technology Act of 2015" aimed to promote the development and widespread use of emerging ICT and foster and accelerate the convergence of ICT and ICT-enabled facilities in government agencies and public schools. This legal basis opened opportunities for today's

students which are limitless, borderless, and instantaneous so it only logical that their learning environment should reflect their everyday lives. Just as pens and pencils were the predominant tools for knowledge and learning during a large part of the last century, computers and the Internet are key tools for learning and knowledge production for the 21st century (Warschauer, 2005). Demski (2012) says, "If we want our students to be able to find meaningful work and be contributing members of a global society, then we need to prepare them for their future, not our past". It is imperative that students can interact with technology and the Internet because the 21st century offers us far more options to learn and grow intellectually.

This study aims to find out the effectiveness of Google Classroom at Multiple Intelligence International School to their Grade 6 pupils. High technology and understandable interface will enable teachers to work much easier, so they can concentrate on their work and the main target of the course instead of concentrating on solving minor problems such as printing and sharing assignments or explaining material to each student individually.

Conceptual Framework

The conceptual framework of this study illustrates the paradigm presented through the Input-Process-Output model.

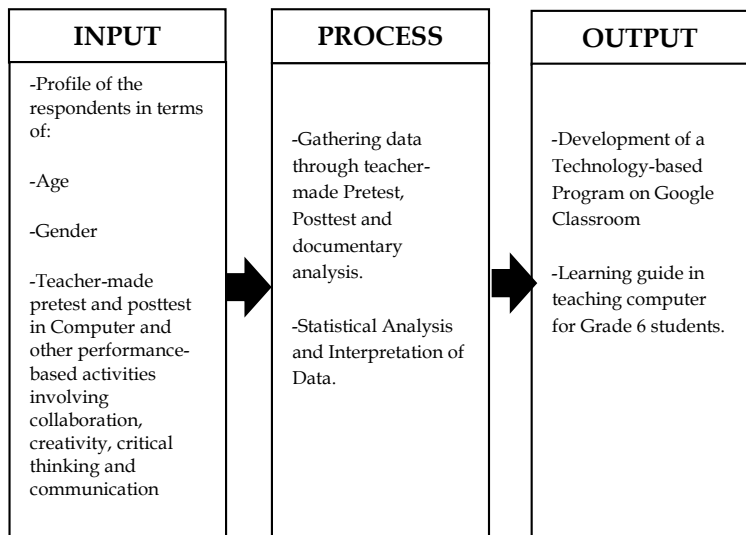


Figure 1 – Paradigm of the Study

Statement of the Problem:

This study sought to find out the determination of learner’s academic computer skills through Google Classroom. Specifically, it aimed to answer the following questions:

1. What is the profile of the students in terms of:
 - a. Age
 - b. Gender
2. What is the achievement level of the control and experimental group as measured by:
 - 2.1 pretest
 - 2.2 posttest
3. What is the achievement level of the experimental group as measured by performance based assessments as regards their computer skills through Google Classroom in terms of:

| | |
|-----------------------|-------------------|
| 3.1 collaboration | 3.3 creativity |
| 3.2 critical thinking | 3.4 communication |
4. What is the average gain of the control group using the traditional method and the experimental group in the posttest?

5. How significant is the difference in the student’s computer skills of the Control and Experimental group in the posttest after applying Google Classroom?
6. How may the result of the study be utilized in the development of a technology-based program to improve the students’ academic achievements in Computer 6?

Hypothesis:

The hypothesis was tested for rejection or acceptance at .05 level of significance.

There is no significant difference in the student’s computer skills in the pretest and posttest results as measured by a teacher-made test in Computer.

Significance of the Study:

The purpose of this research is to determine the efficiency of Google Classroom to Grade 6 pupils in creating their school activities online. This study, which supports research, reviews the proficiency of the teachers for a virtual classroom in the Multiple Intelligence International School and this will be beneficial to the following:

Subject Teachers- The findings of this study aims to help the traditional-classroom teachers to distinguish their proficiency in terms of keeping their paperwork for all their classes organized in one dashboard. With a few clicks, homework can be assigned digitally to each class.

Pupils- The result of this study hopes to help the pupils by providing enhanced online based tool that can be used to improve in-depth learning and to develop basic skills technology can have a positive impact on the self-esteem of students, especially for at-risk students with low self-esteem and self-confidence. Technology will only continue its reach into education and classrooms. While it’s undeniable that the addictive behaviors and shortcuts that can come with technology can be harmful, when used as a tool to further

advance learning and paired with teaching essential life skills, technology can do a lot of good benefits.

Parents - Through the study, the parents/guardian can monitor missing and upcoming work that's due daily through the email updates sent by the school.

IT Teachers - the researcher aims to simplify creating, distributing and grading assignments in a paperless way. The primary purpose of this study is to streamline the process of sharing files between teachers and students through Google Classroom.

School Administrator - with Google Classroom, the school administrators can share all the advantages through this medium. Also, real-time feedback—View, comment, and edit stakeholder's work in real time.

Curriculum Makers - the findings of this study will be useful and relevant to the curriculum makers in terms of enriching a curriculum using Google Drive is particularly handy for curriculum makers when revising and providing feedback on the course outline of the school. A great organizing tool -- you can easily upload existing files to Google Drive so that everything is accessible in one place.

Researcher Herself - The outcome of the study aims to help other researchers by giving insights and guidelines who may apt to conduct the same study utilizing other variables. This research is limited to the study of the efficiency of Google Classroom and its relationship to the academic performance of the pupils of Grade 6 in Multiple Intelligence International School during school year 2018-2019.

Other Researchers - The researcher highly recommends further studies about new strategies that will address learning preferences of today's learners through Google Classroom with its intensive and extensive use. In terms of communication and

collaboration, some tools such as online telecommunication were used to help improve productivity. While spreadsheets are applications used to organize data and other information into tables and quickly calculate numbers can also be used for advanced critical thinking.

Review of Related Literature and Studies

The researcher referred to a number of reading materials that dealt with the problem of this study. Ideas and insights on the content and conduct of this study were gained from the materials read. The following are among the significant ones which were found to be related to the study.

Google Apps for Education is a suite composed of hosted email and Drive, its online Microsoft Office-like collaboration applications that are offered for free by Google to universities. With this ongoing implementation, Google apps are being used by almost the entire population of schools in the nation. Students, teachers, and staff already have the ability to put all their educational materials, work information, contacts, and schedules online to be accessible anywhere on the web.

REPUBLIC ACT NO. 10844 known as the "Department of Information And Communications Technology Act of 2015", aimed to promote the use of ICT for the enhancement of key public services, such as education, public health and safety, revenue generation, and socio-civic purposes and to promote digital literacy, ICT expertise, and knowledge-building among citizens to enable them to participate and compete in an evolving ICT age.

Philippine schools are not so much behind on technology. They used laptops and tablets for reports, but other aspects like taking down notes, creating lesson plans, and marking grades are still generally done on paper. With the introduction of Google apps for universities, that will move to the cloud or online storage. One of the biggest universities in the country to migrate its education management system was the University of the Philippines (UP), the country's premier state university.

In the Philippines, this is a rare opportunity to learn the latest, and experience first-hand the great tools of Digital Marketing and Web Analytics.

Google officially launched the opening of the Google Philippines office last January 23, 2012 making Manila the site of the company's fifth Southeast Asia office. Narciso Reyes, formerly Google's head of sales for the Philippines said that Google Philippines' plans for the future of technology, he pointed out that local team will be committed to providing better services to our Filipino users and to helping businesses - large and small - grow locally and globally, contributing to the growth of the Philippine economy. They envisioned Google as part of everyday Filipino lives and as a partner in the development of local communities, culture and business.

In an article (2014) country communications manager Gail Tan said that the Department of Education, Commission on Higher Education, and the Technological Education and Skills Development Authority have migrated to Google Apps for Education to improve and digitize their learning management system. Among the universities that have gone Google Apps for Education include the University of the Philippines, Ateneo de Manila University, and the De La Salle University. During the launch last year, UP president Alfredo Pascual said Using Google Apps for Education would help the university achieve its objective of integrating technology in its operations.

The adoption by select high schools was formalized during the launch of "K-12 Gone Google" program in Philippine Science High School (PSHS), the country's premiere science high school. The successful employment of Google Apps for Education to the whole PSHS system not only ensures a collaborative environment, but also brings in new learning horizons to students by enabling them to reach out to new knowledge beyond classroom settings.

This is a clear step to aid the learning experience of our students and to achieve PSHS's goal of being in ranks with the top science schools in Southeast Asia," said Dr. Rod Allan de Lara, deputy executive director and OIC of PSHS System. Since the program was launched to universities in the country in 2012,

two million users from 112 higher education institutions and K-12 schools have gone to Google. The country's entire education department, which includes the Commission on Higher Education (CHED), Department of Education (DepEd) and Technical Education and Skills Development Authority (TESDA), have also migrated to Google Apps. An estimated 150 schools with 2.5 million users are also in the process of deploying Google Apps in their campuses.

By allowing more schools to gain tools that will provide them with an efficient instruction of learning, we secure an education environment where knowledge is readily available to many. Google commits itself to finding more ways on how to improve access to better education. Google said the Department of Education, Commission on Higher Education, and the Technological Education and Skills Development Authority have migrated to Google Apps for Education to improve and digitize their learning management system. Aside from UP, 16 other universities are in the process of adopting the system. These included Adamson University, Ateneo de Zamboanga University, Miriam College, and Rizal Technological University, among others. Other universities that have earlier adopted Google Apps for Education include Ateneo de Manila University, De La Salle University, Mapua Institute of Technology, Lyceum of the Philippines, and the Pamantasan ng Lungsod ng Maynila.

Internally, CHED was able to use the saved money and resources to digitize more of their information making it more accessible to users, and to improve their website. Overall, the Commission saved money and resources while progressing towards their vision of the highest standards for Philippine higher education.

Another study by Ventayen (2017) entitled Usability Evaluation of Google Classroom: Basis for the Adaptation of GSuite E-Learning Platform, E-learning is a technology learning that plays an important role in modern education and training. Based on the result, Google Classroom is highly recommended, it is suggested that for institutions who practice blended

learning could utilize the platform as a tool for eLearning. Based on the usability evaluation of the platform, Google Classroom is extremely useful in the assignments and collaborative learning. Pangasinan State University is currently subscribed to GSuite for Education, and recently introduced Google Classroom as an eLearning platform for an educational institution. Based on the result, the respondents agreed that GSuite classroom is recommended and was proposed as e-learning platform for Pangasinan State University, Lingayen Campus initially in the College of Hospitality Management, Business and Public Administration.

Another study by Matulac (2016) studied that the use of technology in order to attain a rich experience of learning is essential. There are a good many examples to pattern our actions from. But there are also pitfalls that beset us once in a while. Presentation Tools are windows to how our students think. Presentations can be multifaceted and can even show the different intelligences of our students. The challenge for us would be to develop authentic assessments or rubrics in order to make a better evaluation.

As we adapt new strategies and equipment in learning, we also expand our knowledge which has a great impact on our education here in the Philippines. Technologies used in classroom helps students to learn more easily and wider because of online resources provided by computer devices. The Philippines is one of the many developing nations that have turned to Information and Communication Technology (ICT) as a tool to improve teaching and learning. Unfortunately, implementation suffers from several shortcomings: the absence of information on how ICT is actually used; and insufficient teacher preparation.

Del Rosario (2013), studied the technology integration in teacher education programs in the Philippines, and she stated that the influence of modernization and the desire our country to become modernized, we need to consider ICTs as strategic tools; whether ICT is introduced as an added course or infused

in the curriculum; the evolving nature of technology, in particular the emerging trend of mobile technology and how this impacts technology use. The study recommended the inclusion of national ICT policies in the study of technology integration in developing countries and more focused studies on pre-service technology preparation; and studies on the use of mobile technologies or M-learning.

Another parallel study was made by Bonifacio (2013) as she studied the development of (ICT) Curriculum Standards for K-12 Schools in the Philippines. She believed that the first step was to accept the need to formulate these standards and prepare for the challenges ahead by utilizing whatever resources were available, to carry on the appropriateness, effectiveness and sustainability of ICT integration in schools, keeping in mind that its success lie in the hands of Filipino educators who were committed to make their education system work in. Though it is difficult to confirm exactly how many users by types of users are actively using Google Apps for Education, for work and person use, we know the total number of educational users and work users is in the tens of millions and when we add personal users, Google apps users climb well into the hundreds of millions of users. Bondarenko (2017) stated that the organization of the learning process using Google Classroom ensures the unity of in-class and out-of-class learning; it is designed to realize effective interaction of the subjects learning in real time; to monitor the quality of training and control the students' learning achievements in class as well as out of it, etc.

In an article by Janzen (2014) stated that not every student has a device and Wi-Fi at home. One teacher ended up having to print out assignments for those who did not have the ability to complete the assignments at home in her "paperless classroom." But in a Google Classroom being done in school, she was able to manage the workflow process, and an improvement in classroom efficiency reduced costs associated with printing. As more research was conducted, some teachers discovered that students are now becoming more organized,

connected, and engaged in paperless classrooms.

In New York Times article by Natasha Singer (2017), the sixth graders at Newton Bateman, a public elementary school is at the forefront of a profound shift in American education: the Googification of the classroom. In the space of just five years, Google has helped upend the sales methods companies use to place their products in classrooms. It has enlisted teachers and administrators to promote Google's products to other schools. It has directly reached out to educators to test its products – effectively bypassing senior district officials. And it has outmaneuvered Apple and Microsoft with a powerful combination of low-cost laptops, called Chromebooks, and free classroom apps.

Today, more schools use Google education apps like Gmail and Docs. Although Google-powered laptops like Chromebooks initially struggled to find a purpose. Today they account for more than half the mobile devices shipped to schools. In doing so, Google is helping to drive a philosophical change in public education – prioritizing training children in skills like teamwork and problem-solving while de-emphasizing the teaching of traditional academic knowledge, like math formulas. In view of other foreign countries there are some important features of Google Classroom which can be used by both teachers and students for better learning and interaction.

Another study in Google Classroom was the research Robert Cash, (2015) claimed that using Google Classroom allowed going paperless as well as using learning time more effectively and helping students learn fast. Education has long gone digital. Educators successfully used online platforms to exchange feedback with their students, share assignments, plan their lessons or check for plagiarism. Still, free software proved to be rather effective. And one of such platforms was Google Classroom.

In Chicago, Jordan Catapano (2016) cited Google had already made a large impact on education with its Google Apps for Education (GAPE), which include Google Docs, Google Spreadsheets, Google Calendars, and a diverse array of other

apps easily utilized by schools. Google was introducing Google Classroom, a technology in the classroom app designed to provide a single dashboard to unify the instructors' use of other Google apps.

In short, Google Classroom offered a one-stop platform for facilitating digital production, workflow, and communication between teachers and students. Like other Google apps, it is available for free to schools, had no ads, and never used student or teacher content for advertising purposes.

According to Perez (2015), she studied that integrating classroom technology in today's schools was not optional, it is something that needs to be done by students to be prepared for the future. We are in the digital age and students must know how to properly and appropriately speak the language if they want to be successful. Janzen (2014) in her study made at Pennsylvania State University stated that "Seven things you need to know about Google Classroom." From an administrative perspective, administrators can either require each teacher to verify Google Classroom accounts manually, or allow every student-user to create a much like Google Sites or webpages. Changes had been made to automate student enrollment per registration data since Google Classroom was released in September 2014; however, the process requires custom coding by an IT administrator and integration with Google Groups.

According to Stephanie J. Blackmon, PhD (2017) the graduate students in her study "The Stream's the Thing: Google Classroom and Graduate Education" seemed to have a positive experience with Google Classroom. In her study, some students felt connected with classmates and the professor because of the Interactive opportunities in the classroom space. Among those opportunities were posting comments under stream-uploaded information and on assignments that are submitted through Google Docs. Students can also upload videos and photos to the course stream to interact in non-text-based ways.

Ballew (2017) said that as technology becomes more pervasive in society, it is also more frequently integrated into schools across the globe. However, the role of facilitator and

keeper of classroom technology still lies in the hands of the teacher. As teachers attempt to integrate technology and its uses in their classrooms, they also carry with them their preconceived notions and prior experiences with technology. Therefore, the teachers' perceptions can possibly affect the efficacy of the implementation. Her study analyzed a school district's Google Classroom integration and measured whether teachers' years of experience, grade level assignment, and subject matter influenced their perceptions of the technology-based Google Classroom. The results were found to be dependent upon the years of experience, grade level assignment, and subject matter of the teachers.

METHODOLOGY

This chapter describes the research method used, respondents of the study, techniques and instruments used, sampling procedure, validation of the instrument, the data gathering procedures, and statistical treatment of data.

Research Design

The experimental method of research employed in this study was utilized to determine if the use of Google Classroom had implications to Grade 6 pupils' achievement test in Computer at Multiple Intelligence International School. Calmorin (2011) stated that research is a kind of study that is undertaken when a problem solving approach is described in the future and on variables that are carefully controlled or manipulated.

Respondents of the Study

The respondents of this study were 91 students from a total of 427 students handled by the researcher. These students were from 4 sections of Grade 6 level. There were 44 students from the control group and 47 students from the experimental group who utilized Google Classroom during the class.

Research Instruments

The main instrument of the study was a teacher-made pretest and posttest for control and experimental group of students. The teacher-made pretest and posttest as measuring tool, analyzed the implications of technology based learning habits on students' achievement test in Computer. The scope of the test covered topics for the entire first quarter. The type of test is multiple choice, consisting of questions that stimulate their analytical skills. Application items are more complex than simple recall questions, it measures their computer knowledge through specified application of skills in spreadsheets, how computer works, as well as Google Classroom features.

A standard-based assessment as mandated in DepEd Order No. 73, s. 2012 were used to determine the performance of the students for Computer as specialized subject in the K-12 curriculum:

| | | |
|---------------|---|-------------|
| Performance | : | 30% |
| Project | : | 30 |
| Recitation | : | 20% |
| Participation | : | 20% |
| TOTAL | : | 100% |

Data Gathering Procedure

Prior to the conduct of the study, the researcher sought approval from the School Principal to conduct the study among the students of Grade 6. After the endorsement the researcher asked the registrar's office to have the data of the total population of the twenty-two sections handled by the researcher and the schedule of the whole process of the study were conducted.

The control group were the sections A and B class and experimental group were the sections C and D. The same learning goals were expected during their computer class but with differentiated instruction on the process of determining their skills. The control group had a traditional classroom setting and used paper and pen in answering their tests and other exercises while the Experimental group utilized Google Classroom on their computer activities. All the assignments, lectures and tests were submitted using Google Classroom as a

virtual way to access the activities and their platform in submitting their responses. The title of the assignment, instructions, videos and the link to the website were also posted as means of communication. When they retrieved their email, a task was posted in Google Classroom. Students collaborated their ideas when they worked on the same document simultaneously. Another exercise let them enhance their critical thinking skills when they made mathematical formulas in Microsoft Excel. Afterwards, the researcher asked the students to design a layout using formatting tools to show their creativity.

Sampling Technique:

Purposive sampling was applied in selecting the respondents in order to validate the outcome of the study. The respondents were selected purposively from Grade 6 handled by the researcher.

According to Calmorin (2011), the purposive technique used by the researcher in the conduct of this study is a form of sampling in which the selection of the sample is based on selecting the individuals as sample according to the purpose of the researcher as the basic and best known probability sampling design. It gives each unit of the population an equal probability or chance of being chosen for the sample. As such, it is considered as the best sampling design.

Validation of Instrument:

A dry run was conducted to validate the survey for the profile of the respondents and students in the experimental group accessed the Google Form link through Google Classroom to determine if it has an impact on their academic achievement in Computer 6.

Administration and Retrieval of the Instrument:

At the beginning of the 1st Quarter with estimated 6-8 learning sessions, two separate classes in the Computer at the Grade 6 level were selected for the purpose of this study. The two classes were paired as similarly, as possible on the basis of their academic performance as reflected on their report cards in the previous quarters. Although there were minor deviations in

the individual pairings, the academic level of performance for the two classes was almost identical.

The researcher personally informed the School Principal about the conduct of the study on Grade 6 pupils as respondents. After that, the pretest were given on the scheduled computer session, the respondents were divided into two groups. The control group underwent the traditional method of teaching.

Computers with the use of activity sheets and teachers directed instructions, hands-on activities and discussions based on the topics that measured the performance of the students. On the other hand, the experimental group used Google Classroom on some parts of the lessons for one cycle to measure their computer skills. Google Classroom is a free online software application developed by Google intended for schools. The objective was to simplify creating, distributing and grading assignments in a paperless way. Another purpose of Google Classroom was to streamline the process of sharing files between teachers and students. The coverage of the lessons were collaborative data entry using Google Sheets, History of the Internet and How it Works, Five Generations of Computer, Mechanics of Wireless Transmission, Cloud computing and Microsoft Excel. Instructions, lessons and submission of work was a web-based platform that integrated Google Suite for Education account services which included Google Docs, Gmail, Google Forms, Google Sheets and Google Calendar. A series of hands-on activities were made by the teacher for the two groups, based on the fundamental lessons encompassed by the Grade 6 Computer curriculum. They were asked to collaborate, communicate and practice critical thinking. The experimental group shared their email addresses with their group mates to work on the same file, retrieved the teacher's instructional materials online and sent their responses through email or Google Classroom.

Others were assigned to draw or insert images for their projects to enhance their creativity. In the next sessions, the experimental group used Microsoft Excel and Google Sheets to

formulate mathematical computations in order to develop critical thinking.

On day one, the objective was to measure their skills in terms of communication. The researcher sent a task in email about generations of computers, artificial intelligence, integrated circuits and microprocessors. Questions are posted in Google Classroom and they were asked to send back their responses online. To assess the students' computer skills, another activity was posted in Google Classroom about research regarding technological advancement.

Day two, the next objective was to assess their computer skills in terms of collaboration. The experimental group was divided into smaller groups and worked on the same document simultaneously using Google Docs. Their task was to make a description on mechanics of wireless transmission and make an illustration about internet structure and the process of how devices were connected. Definition of infrastructure protocols, domain name systems and World Wide Web were also discussed.

Day three, the next objective was to assess their skills in terms of creativity using Google Slides. The experimental group were asked to design a chart about cloud computing and other services available on that platform. Advantage and disadvantages of cloud computing and the description of file sharing, data security, online collaboration tools and hacking.

Day four, another objective was to assess their computer skills in terms of critical thinking using Google Sheets. They made data entries and created a mathematical formula that computed the sum, difference, product, quotient and average.

Their performance was computed based on demonstration of knowledge, skills and understanding of the learning process as evidenced in each class activities, work output and participation. Somehow, Google Classroom saved time, paper, pens of teachers and students and made it easy to create classes, distribute assignments, communicate, and stay organized in a digital way.

On day 5, the researcher administered the posttest to the respondents of the study. The pretest was administered in July, 2018 while the posttest was given to the students last September, 2018.

The results of the pretest and posttest were compared, treated and analyzed carefully to find out the significant difference on the achievement test in order to come up with the interpretations and findings of the study.

Scope and Delimitation:

This research is limited to the study of the determination of learners' computer skills through Google Classroom at Multiple Intelligence International School and its relationship to the academic performance of the Grade 6 level with four sections with a total of 91 students during school year 2018-2019.

Definition of Terms:

For a common frame interest, the following terms are defined in the context of the study. Considerable terms used in this study are defined in context of this study.

Applications software (also called end-user programs) include such things as database programs, word processors, Web browsers and spreadsheets. Figuratively speaking, applications sit on top of systems software because they are unable to run without the operating system and system utilities.

Computer Proficiency is the ability to use computers and related technology efficiently, with a range of skills covering levels from elementary use to programming and advanced problem solving.

Computer Technology A computer is a device that can be instructed to carry out arbitrary sequences of arithmetic or logical operations automatically.

Determination is a positive emotional feeling that involves persevering towards a difficult goal in spite of obstacles. Determination occurs prior to goal attainment and serves to motivate behavior that will help achieve one's goal.

E-Learning theory describes the cognitive science principles of effective multimedia learning using electronic educational technology. Cognitive research and theory suggest that the selection of appropriate concurrent multimedia modalities may enhance learning, as many applications of several other principles.

Information and Communication Technology - refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums.

G Suite is a brand of cloud computing, productivity and collaboration tools, software and products developed by Google, first launched on August 28, 2006 as "Google Apps for Your Domain".

Gmail is a free, advertising-supported email service developed by Google. Users can access Gmail on the web and use third-party programs that synchronize email content.

Google Apps for Education is a service from Google that provides independently customizable versions of several Google products using a domain name provided by the customer.

Google Classroom Google Classroom is a learning management system developed by Google for schools that aim to simplify creating, distributing and grading assignments in a paperless way.

Google Drive Google Drive is a file storage and synchronization service developed by Google. Launched on April 24, 2012, Google Drive allows users to store files in the cloud, synchronize files across devices, and share files.

Learner is someone who is learning about a particular subject or how to do something.

Millennial Students are usually considered to apply to individuals who reached adulthood around the turn of the 21st century.

Statistical Treatment:

The percentage, weighted mean, and the T-test for correlated samples were the statistical tools used to analyze and interpret the results of the achievement tests of the respondents. The following statistical techniques were employed in the analysis and interpretation of the results.

1. Percentage - This statistical treatment was used to show the difference in age, gender.

$$\text{Percentage} = \frac{f}{N} 100\%$$

Where: f - frequency

N - number of respondents

% - percentage

2. Mean - was used to describe the level of performance in Computer during the pretest and posttest of the respondents.

$$\bar{X} = \frac{\sum fm}{N}$$

Where:

\bar{X} - mean

fM - Sum of the products of frequency by midpoint

N - Total number of cases

3. T-Test - used to test the significant difference between the in the pretest and posttest of the respondents.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{SD_1^2}{N1} + \frac{SD_2^2}{N2}}}$$

Where:

t = tucky test

\bar{x}_1 = mean average of the first variable

\bar{x}_2 = mean average of the second variable

SD_1^2 = variance of the first variable

SD_2^2 = variance of the second variable

N^1 = number of cases of the first variable

N^2 = number of cases of the second variable

Presentation, Analysis and Interpretation of Data

This chapter of the research study provides the researchers’ analysis and interpretations on the data. Results in this chapter are presented using tables and text presentations.

Table. 1.1

Distribution of Subjects According to Age

| AGE | Control | | Experiment | | TOTAL | |
|-------|---------|------|------------|-----|-------|-----|
| | N | % | N | % | N | % |
| 13 | 2 | 5 | 1 | 2 | 3 | 3 |
| 12 | 3 | 7 | 11 | 25 | 14 | 16 |
| 11 | 32 | 72 | 25 | 57 | 57 | 65 |
| 10 | 7 | 16 | 7 | 16 | 14 | 16 |
| Total | 44 | 100% | 44 | 100 | 88 | 100 |

Table 1.1 presents the distribution of the subjects in the control and experimental group according to age. It can be gleaned in the data that 7 or 16 percent of the students in the control group are in 10 years of age, 32 or 72 percent belong to 11 years and only 5 or 12 percent belong to 13 and above. For experimental groups, 7 or 16 percent are also 10 years old; 25 or 57 percent are 11 years old, 11 or 25 percent belong to age 12 and only 1 or 2 percent is above 13 years of age. From the total data it shows that the majority of the students are 11 years old with 64 percent. The data shows that the pupils included in the study are just right for their age in their grade level.

Table 1.2

Distribution of Subjects According to Gender

| Gender | Control | | Experimental | | Total | |
|--------|---------|-----|--------------|-----|-------|-----|
| | N | % | N | % | N | % |
| Male | 26 | 59 | 27 | 61 | 53 | 60 |
| Female | 18 | 41 | 17 | 39 | 35 | 40 |
| Total | 44 | 100 | 44 | 100 | 88 | 100 |

Table 1.2 presents the distribution of the subjects in the control and experimental group according to gender. The table shows that 26 or 59 percent of the control group were male and 18 or 41 percent female. In the experimental group 27 or 61 were male and 17 or 39 percent are female students. The data revealed that there are more males than female subjects included in the study.

Table 2.1

Achievement Level of Grade 6 pupils in the Pretest

| Level of Achievement | Control Group | Experimental Group | Increased/Decreased |
|----------------------|---------------|--------------------|---------------------|
| Mean | 21.14 | 19.05 | 2.09 |
| Mastery | 48.04 | 43.29 | 4.75 |

Table 2.1 reveals the level of achievement of the control group and the experimental group in the pretest. As gleaned in the table, the mean performance of the control group in the

pretest is 21.14 with the mastery level of 48.04. On the other hand, the mean performance of the experimental group is 19.05 with the mastery level of 43.29. This implies that since both control and experimental group, which came from heterogeneous sections have a varied level of achievement which is revealed by their average mean and mastery levels.

Table 2.2
Achievement Level of Grade 6 Pupils in the Posttest

| Level of Achievement | Control Group | Experimental Group | Increased/Decreased |
|----------------------|---------------|--------------------|---------------------|
| Mean | 25.50 | 24.36 | 1.14 |
| Mastery | 57.95 | 53.73 | 4.22 |

Table 2.2 reveals the level of achievement of the control group and experimental group in the posttest. As gleaned in the table, the mean performance of the control group is 25.50 with a mastery level of 57.95, while the mean performance of the experimental group is 24.36 with a mastery level of 53.73. It can be seen that the mean performance of the control group in the posttest decreased by 1.14 than the experimental group as well as the mastery level which is lower by 4.22. The result clearly shows that after comparing the posttest of the control and experimental group, there is a decrease in the mean and the mastery level of the students after using Google Classroom in teaching and learning Computer.

Table 3.1
Achievement Level of Experimental Group in terms of Collaboration

| Level of Achievement | Pretest | Posttest | Increased/Decreased |
|----------------------|---------|----------|---------------------|
| Mean | 96.5 | 96.45 | 0.05 |
| Mastery | 219.32 | 219.21 | 0.11 |

Table 3.1 reveals the level of achievement of the experimental group as measured by performance based assessments as regards their computer skills through Google

Classroom in terms of collaboration. As gleaned in the table, the mean performance of the experimental group is 96.5 with the mastery level of 219.32. In the posttest, the mean performance is 96.45 with the mastery level of 219.21. This implies that the experimental group had decreased their level of achievement as revealed by their average mean and mastery levels.

Table 3.2
Achievement Level of Experimental Group in terms of Critical Thinking

| Level of Achievement | Pretest | Posttest | Increased/Decreased |
|----------------------|---------|----------|---------------------|
| Mean | 96.32 | 96.70 | 0.38 |
| Mastery | 218.90 | 219.78 | 0.88 |

Table 3.2 reveals the level of achievement of the experimental group as measured by performance based assessments as regards their computer skills through Google Classroom in terms of critical thinking. As gleaned in the table, the mean performance of the experimental group in the pretest is 96.32 with the mastery level of 218.90. In the posttest, the mean performance is 96.70 with the mastery level of 219.78. This implies that the experimental group had increased their level of achievement which was revealed by their average mean and mastery levels.

Table 3.3
Achievement Level of Experimental Group in terms of Creativity

| Level of Achievement | Pretest | Posttest | Increased/Decreased |
|----------------------|---------|----------|---------------------|
| Mean | 91.41 | 91.61 | .20 |
| Mastery | 207.75 | 208.21 | .46 |

Table 3.3 reveals the level of achievement of the experimental group as measured by performance based assessments as regards their computer skills through Google Classroom in terms of creativity. As gleaned in the table, the

mean performance of the experimental group in the pretest is 91.41 with the mastery level of 207.75. In the posttest, the mean performance is 91.61 with the mastery level of 208.21. This implies that the experimental group had increased their level of achievement which revealed by their average mean and mastery levels.

Table 3.4
Achievement Level of Experimental Group in Terms of Communication

| Level of Achievement | Pretest | Posttest | Increased/Decreased |
|----------------------|---------|----------|---------------------|
| Mean | 94.93 | 95.97 | 1.04 |
| Mastery | 215.75 | 218.13 | 2.38 |

Table 3.4 reveals the level of achievement of the experimental group as measured by performance based assessments as regards their computer skills through Google Classroom in terms of communication. As gleaned in the table, the mean performance of the experimental group in the pretest is 94.93 with the mastery level of 215.75. In the posttest, the mean performance is 95.97 with the mastery level of 218.13. This implies that the experimental group had increased their level of achievement which was revealed by their average mean and mastery levels.

Table 4
Mastery Level of the Control and Experimental Groups of Grade 6 pupils

| | Mastery Level | | Average Gain/Difference |
|--------------|---------------|-------|-------------------------|
| | Before | After | |
| Control | 48.04 | 57.95 | 9.91 |
| Experimental | 43.29 | 53.73 | 10.44 |

Table 4 presents the mastery level of the control and experimental group. The results revealed the data before and

after applying Google Classroom in teaching and learning Computer as revealed by the average difference in the pretest and posttest.

The table reveals that the mastery level of the control group is 48.04 in the pretest and became 57.95 in the posttest. On the other hand, the mastery level of the experimental group in the pretest was 43.29 and became 53.73 in the posttest.

The data revealed that the performance of the experimental group became higher by 0.53 over the Control group. The table indicates that after the posttest both groups gained an increase in their mastery level. However, as the table shows, the experimental group gained a higher mastery level compared to the control group. The result indicates that the experimental group performed better after the application of the Google Classroom as compared to the control group.

The data shows that the achievement of the experimental group satisfactorily increased after applying the Google Classroom which made use of more interactive strategies for learning compared to the control group where the traditional strategies of discussion and question and answer of teaching the lesson were utilized.

Table 5
Significant Difference in the Achievement Level of the Control and Experimental Group in the Posttest

| df | Computed Value | Critical Value | Interpretation |
|----|----------------|----------------|--------------------------|
| 95 | 0.11 | 2.0 | Significant HO: Accepted |

Tested at .05 Level of Significance

Table 5 indicates the result of the statistical test of significance between the achievement level of Grade 6 pupils after applying the Google Classroom. As gleaned from the table, the computed value of 0.11 which was lesser than the critical value 2.0 tested at .05 of significance at 95 degree of freedom.

Based on the findings, there is no significant difference between the level of achievement of the control and experimental group after applying Google Classroom as revealed by the post test. The null hypothesis is therefore accepted.

Summarizing the above stated, we may claim the benefits of using the Google Classroom for blended learning organization are as follows: real-time interaction of real time learning the topics and independent work increased; the presence of constant pedagogical support and ensuring the integrity of both in-class and out-of-class work; increasing the visual aids in learning; development of critical thinking; attracting students to the familiar electronic environment with the use of ICT; operational control of educational achievements. While the disadvantages to take into account when organizing distance learning through the Google Classroom are to be considered: the predominance of external learning motivation and the low level of readiness of individual students for working in the new environment; lack of proper material and technical support for particular academic classrooms; the need for extra-curriculum pedagogical support, which requires additional time consuming from the teacher; inadequate attention of individual teachers to the problem of in-class and distance learning implementation. Further study of the problem of organizing the blended learning for computer students is planned in the direction of developing a model and methodic of using Google Classroom as a tool of blended training future teachers of computers.

RESULTS, CONCLUSIONS AND RECOMMENDATIONS

This chapter gives an overview of the study, a summary of the findings, conclusions drawn, and the recommendations offered. The primary purpose of this study was to find out if Google Classroom can improve Grade 6 student's skills in computer education and academic performance.

Furthermore, this study investigated the result of the performance of the Grade 6 pupils using Google Classroom. Specifically, answers to the following questions were sought:

1. What is the profile of the students in terms of:
 - 1.1 Age
 - 1.2 Gender
1. What is the achievement level of the control and experimental group as measured by:
 - 2.1 pretest
 - 2.2 posttest
2. What is the achievement level of the experimental group as measured by performance based assessments as regards their computer skills through Google Classroom in terms of:
 - 3.1 collaboration
 - 3.2 critical thinking
 - 3.3 creativity
 - 3.4 communication
3. What is the average gain of the control group using the traditional method and the experimental group in the posttest?
4. How significant is the difference in the student's computer skills of the Control and Experimental group in the posttest after applying Google Classroom?
5. How may the result of the study be utilized in the development of a technology-based program to improve the students' academic achievements in Computer 6?

Summary of Findings

In the light of the facts presented, analyzed and interpreted in the foregoing chapter, the following were the findings of the study:

1. **Profile of the Students as to:**
 - 1.1 **Age**
 - Majority or 72 percent of the students in the control group were 11 years of age while the experimental group, 25 or 57 percent are 11 years old; followed by 11 or 25 percent who was 12 years of age
 - 1.2 **Gender**

- Twenty six or 59 percent of the control group were male and 18 or 41 percent female while 27 or 61 percent of the experimental group were male and 17 or 39 percent female.

2. Level of Achievement of Grade 6 pupils in Computer as measured by the

2.1. Pretest

- The mean performance of the control group in the pretest was 21.14 which was higher than the computed mean of the experimental group at 19.05 while the mastery level of the control group was 48.04 which was also higher than the experimental group at 43.29.

2.2. Posttest

- The mean performance of the control group in the posttest as measured by the teacher-made test was 25.50 which is higher than the overall assessment of the experimental group at 24.36. The mastery level of the control group was 57.95 while the experimental group was 53.73. This showed that the control group improved their performance using the traditional method of teaching and learning computers.

3. Academic Achievement Level of the Experimental Group in terms of

3.1 Collaboration

- The mean performance of the experimental group in the pretest in terms of collaboration as measured by performance based assessments was 96.5 which is higher than their posttest assessment at 96.45. The mastery level in the pretest was 219.32 while in the posttest was 219.21. This showed that the experimental group did not improve their performance in terms of collaboration and in learning computers.

3.2 Critical Thinking

- The mean performance of the experimental group in the pretest in terms of critical thinking as measured by performance based assessments was 96.32 which is lower than their posttest assessment at 96.70. The mastery level in the

pretest was 218.90 while in the posttest was 219.78. This showed that the experimental group improved their performance in terms of critical thinking and in learning computers.

3.3 Creativity

- The mean performance of the experimental group in the pretest in terms of creativity as measured by performance based assessments were 91.41 which is lower than their posttest assessment at 91.61. The mastery level in the pretest was 207.75 while in the posttest was 208.21. This showed that the experimental group improved their performance in terms of creativity and in learning computers.

3.4 Communication

- The mean performance of the experimental group in the pretest in terms of communication as measured by performance based assessments was 94.93 which is lower than their posttest assessment at 95.97. The mastery level in the pretest was 215.75 while in the posttest was 218.13. This showed that the experimental group improved their performance in terms of communication and in learning computers.

4. Average Gain of the Control and Experimental Group before and after Applying Google Classroom in the Computer lessons.

- The mastery level of the control group in its posttest was 57.95 while in the pretest was 48.04 with an average gain of 9.91. The posttest result of the experimental group was 53.73 which was higher than the pretest which was 43.29 with an average gain of 10.44. This showed improvements in the achievement between the two groups based on the result of the posttest.

5. Significant Difference in the Student's Computer Skills of the Control and Experimental Group in the Posttest after Applying Google Classroom.

There was no significant difference between the level of achievement between control and experimental group after

applying Google Classroom as revealed by the posttest. These findings were denoted by the computed value of the posttest equal to 0.11 which was lower than the critical value of 2.0 with 95 degrees of freedom at 0.05 significance level. The data reveal that the control group performed better in their posttest. Therefore, there is no significant difference in the achievement level of control and experimental group and the null hypothesis was accepted.

6. **Technology-based Program to Improve the Students' Learning Skills in Computer 6**

For the students to be taught the 21st Century skills, there should be more computer-based learning in classes instead of just a traditional classroom setting. These allow students to develop collaboration, communication, convention, critical thinking and work on authentic problems. These recommendations, while general enough to allow flexibility as technology changes and advances, are also specific enough to move forward in regards to technology integration.

CONCLUSIONS

Based on the findings of this research study, the following conclusions are arrived at by this research pertinent to the LEARNERS' COMPUTER SKILLS THROUGH google classroom:

- i. The profile of the subject showed that the majority of them were aged 11 and most of the subjects were male.
- ii. The study revealed that there was an increase in the mean and mastery level in the control group and experimental group though in the experimental group the increase was higher.
- iii. The achievement level of the experimental group showed that there were higher improvements in terms of creativity, critical thinking and communication.
- iv. After the application of Google Classroom in the computer lessons it showed that there was a higher improvement in the mastery level of the experimental group.
- v. Results of the study described an insignificant difference on the academic performance of the students based on the mastery level of the subjects. It simply showed a greater probability that

the students could still acquire computer literacy even without using Google Classroom. This implied that, the academic performance of the students did not depend much on the online communication strategy used by the teacher.

This study further concluded that teachers may also undertake the task of teaching via technology and reinforce collaborative activities to further enhance learning capabilities of the pupils. In this study, the researcher remained positive toward the integrative use of technology-based Google Classroom implementation and continue the use of the traditional teaching method in Computer to successfully enhance their proficiency in handling and teaching the students for as long as the teacher focuses on the proper and effective strategies in teaching computer subjects.

RECOMMENDATIONS

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

Students

- Google Classroom is changing the way students learn for the better because it has the ability to allow students to learn at their own pace while learning about collaboration. This educational platform is very helpful in terms of communicating with other people online.

Teachers

- It can help teachers manage course work more efficiently while customizing teachers and student learning needs. Google Classroom is not the only
- Learning software applications are readily available and it certainly has its downsides, but it is a move in the right direction in a world where students need to be able to collaborate on a digital platform.

Parents

- Help students stay organized and impose responsible use of technology in education by setting limitations because no technology replaces parenting.

School Administrator/Principal

- It is another way for teachers to create paperless workflows in their classrooms. Google Classroom is also a great way to facilitate virtual or blended professional development in school.
- Create Google Classroom for each department and share content-based articles. Then, include a Google document on which everyone can collaborate and work on the same file.
- Create classrooms for mentors/mentees to facilitate ongoing new teacher training.

Google Company

- Continue their commitment to improve educational programs and philanthropic efforts to close the education equity gap through technology, tools, and training that help students and educators.

Department of Education

- The use of technology like Google Classroom in order to attain a rich experience of learning is essential. Educators must take a more creative approach by allowing technology to play a role in the teaching and learning process.

Google Apps for Education

- The use of Google Apps for education like Google Classroom in various schools around the world must continue to facilitate more interactive learning, collaboration and creativity with ease.

Researcher Herself

- As technology continues to be made more readily available, exposure and usage will increase, not only for students but also for teachers. Therefore, teacher preparedness training may need to change.

Curriculum Writers

- b. Design a structured curriculum that will integrate Google Classroom and other technology based platforms that may be used by teachers in preparing their lessons for their respective classes.

Future Researchers

- Conduct a study that will test if there are changes in the academic performance of the students when the action plan is submitted.

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