

# Enhancing Computer Literacy of Grade 5 Learners using Inquiry - Based Strategy

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**Abstract:** *This study used a descriptive method of study. The researcher used a quantitative method to determine the performance level of Grade 5 learners in ICT before and after using an Inquiry-based strategy. Moreover, a significant difference between the performance level of Grade 5 learners in ICT before and after using the Inquiry-based strategy was also determined. 30 purposively selected pupils were the respondents being employed by the researcher. Based on the findings the conclusions were drawn that 20 out of 30 belong to developing and it is in the bracket of 70-75 level of performance. The skills performed of the grade 5 learners with the Performance level of 78.81 belong to developing. The computed value is higher than the critical value which means that there is a significant difference between the performance level of grade 5 learners before and after using the Inquiry-based learning strategy. Based on the conclusions, the following recommendations are drawn and students may discover new concepts in ICT subjects despite from lack of resources to enhance their academic performance. Since the Department of Education, today is lack of budget to help improve the pupils in their academic performance. 21<sup>st</sup>-century teachers may scaffold strategies to enhance the performance of the students in ICT subjects. May the results National Achievement Test of the pupils improve and may have prior knowledge in the subject. The Department of Education may fully support the continuing professional development of students based on the principle of lifelong learning and DepEd's commitment to the development of teachers' potential aimed toward their success in the curriculum.*

**Keywords:** Inquiry-based learning strategy

## 1. Context and Rationale

The twenty-first century reminds us of an era of globalization that has impacted several fields such as economy, science, society, the flow of information, and education with the help of Information and Communication Technology (ICT). ICT has been extensively used in the world, particularly in developed countries (Murgor, 2015) because societies have tended to be more multilingual and included diverse thoughts and cultural norms, as a result, to cope with these differences while communicating, people have begun to use ICT to break the barriers from the idea of otherness (Marczak, 2013). In a sense, the responsibility to help its citizens communicate with members of other societies successfully belongs to the country's education system, especially the foreign language teachers, as foreign language teaching improves intercultural communication competence (Ellis, Ginns, & Piggott, 2009).

The computer was born not for entertainment or email but out of a need to solve a serious number-crunching crisis. By 1880, the U. S. population had grown so large that it took more than seven years to tabulate the U. S. Census results. The government sought a faster way to get the job done, giving rise to punch-card-based computers that took up entire rooms (LiveScience, 2019).

Today, we carry more computing power on our smartphones than was available in these early models. The following brief history of computing is a timeline of how computers evolved from their humble beginnings to the machines of today that surf the Internet, play games, and stream multimedia in addition to crunching numbers.

Computer systems cannot improve organizational performance if they aren't used. Unfortunately, resistance to end-user systems by managers and professionals is a widespread problem. To better predict, explain and increase user acceptance, we need to better understand

why people accept or reject computers. This research addresses the ability to predict people's computer acceptance from a measure of their intentions in terms of their attitudes, subjective norms, perceived usefulness, perceived ease of use, and related variables (Davis, et al, 2019).

In today's world, being literate requires much, much more than the traditional literacy of yesterday. According to the NCTE (National Council of Teachers of English), twenty-first-century readers and writers need to: Gain proficiency with tools of technology; develop relationships with others and confront and solve problems collaboratively and cross-culturally; design and share information for global communities to meet a variety of purposes; manage, analyze, and synthesize multiple streams of simultaneous information; create, critique, analyze, and evaluate multimedia texts; attend to the ethical responsibilities required by these complex environments.

Several learning societies have sought to put a framework on what skills are needed in 21<sup>st</sup> century world (Partnership for 21<sup>st</sup> century Learning, 2015). Partnership for 21<sup>st</sup> century Learning (P21) was developed based on the involvement of teachers, education experts, and business leaders with the aim of defining and illustrating a) the skills and knowledge learners need to be able to be successful in work, life and citizenship, and b) the support systems essential for 21<sup>st</sup> century learning outcomes. Educationalists and many schools in the U. S. and other countries have been using P21 framework extensively by focusing on 21<sup>st</sup> century skills in the learning environments.

On the other hand, 21<sup>st</sup> century support systems make it essential that in this century learning has an innovative support system to help learners involve applicable skills and knowledge, appropriate technologies, and real-world connections to make learning relevant, personalized, and engaging. Five critical support systems by P21 has been

specified to warrant all students receive such learning experiences that build 21<sup>st</sup> century competency: a) 21<sup>st</sup> century standards, assessments of 21<sup>st</sup> century skills, c) 21<sup>st</sup> century curriculum and instruction, d) 21<sup>st</sup> century professional development, and e) 21<sup>st</sup> century learning environments (P21, 2015). The Partnership for 21<sup>st</sup> century Skills which is a path-breaking organization that supports incorporation Of 21<sup>st</sup> century skills into a learning-created framework (Larson & Miller, 2011) that includes core subjects such as “English, reading, language arts, world languages, mathematics, economics, science, geography, history and government and civics” and a variety of interdisciplinary themes “global awareness, financial, economic, business, entrepreneurial literacy, civil literacy, health literacy and environmental literacy” (Fandino, 2013). Further, it proposes three core skills related to these themes and 21<sup>st</sup> century Skills for EFL Learners 5 subjects: a) learning and innovation skills, b) information, media and technology skills, and c) life and career skills (Fandino, 2013).

Moreover, inquiry-based learning develops students’ critical thinking skills because the methods improve the students’ mental activities such as interpretation, analysis, evaluation, explanation, inference, and self-regulation. Previous studies have shown that students’ critical thinking abilities are significantly higher when students are taught inquiry-based learning comparing with traditional methods. Having a free medium of student learning class where students shared good experiences through an inquiry process that is based on curiosity is a preferred learning method to the act of teaching that characterized with teaching by forced (Ahmad, Sitti, Abdul, Mohammad, & Sanitah, 2014; Iakavos, 2011).

The researcher conducted this study to know the performance of the learners in computer literacy. Monitor and determine the academic performance and performance level in ICT of the learners in the computer literacy program being offered by the department of education.

Bulan District is a recipient of the DepEd Computerization Program (DCP) Package. The researcher observed that most of the pupils are not knowledgeable in computers they are not aware of the DCP package given by the institution. This dilemma urges the researcher to study the performance in computer literacy on the academic performance of Grade 5 Pupils in the Bulan North-B Central School, Bulan District.

## 2.Action Research Questions

This study attempts to answer the following:

1. What is the performance level of Grade 5 learners in ICT before using Inquiry based strategy?
2. What is the performance level of grade 5 learners in ICT after Inquiry-based strategies?
3. Is there a significant difference between the performance level of grade 5 learners before and after using Inquiry-based learning Strategy?

## 3.Proposed Innovation, Intervention, and Strategy

The proposed innovation is to create an intervention using inquiry-based learning strategies and undergo evaluation of the intervention using LRDMS of the department of Education. Teachers and the school head would be involved in this study. After the conduct of the innovation, if it is effective, the researcher will create a research output to continually conduct the intervention to enhance and continually help learners learn more in Information Communication and Technology.

Using inquiry-based strategy is a learning process that engages students by making real-world connections through exploration and high-level questioning. It is an approach to learning that encourages students to engage in problem-solving and experiential learning. This strategy would help learners enhance the performance level in computer literacy.

## 4.Action Research Methods

### a. Participants and/or other Sources of Data and Information

The respondents to this study are 30 Grade 5 pupils of Bulan North-B Central School, Bulan District.

### b.Data Gathering Methods

This research focuses on the Quantitative Data Collection Method where the researcher used a teacher-made test to assess learners this would form part of the document analysis. Also, an interview with a guide would also be utilized to gather data. The researcher asked the permission of the principal to conduct the said tests and utilization of intervention to the respective school where the research was conducted.

### c. Data Analysis Plan

The data gathered and be treated with the utmost confidentiality and mean computation for each question would be done to gather correct and relevant data for each response. Using individual performance levels of the pupils using Modular distance learning and utilization of Inquiry-based learning strategies. After the retrieval of the results, the researcher asked experts in statistics to treat the data and find if there is a significant. Upon analyzing data the researcher used frequency count, percentage, ranks and t-test to determine the significant difference of the pre and post test of the pupils after using the intervention with Inquiry-based learning strategy.

## 5.Results and Discussions

### 1. The performance level of Grade 5 learners in ICT before using Inquiry based strategy

Table 1

This section shows performance level of grade 5 learners in Information Communication Technology (ICT). Frequency and percentage were presented to provide

better understanding and using aligned scale from DepEd Order No.73, s.2012 for performance level of the pupils.

**Table 1:** Performance level of Grade 5 learners in ICT before using Inquiry based strategy

Descriptors	Performance Level	
	F	%
Advanced	0	0
Proficient	0	0
Approaching Proficiency	3	10%
Developing	7	23.3%
Beginning	20	66.7%
Total	30	100%
<b>Average PL</b>	<b>58.31</b>	

### Performance Level

It can be depicted in the table that 3 out of 30 garnered approaching proficiency in their performance level. Moreover, 7 pupils got the developing performance and 20 were beginning. It seems that 66.7 percent are learners who did not know how to use a computer and never know how it will be used inside the classroom.

It means that 20 out of 30 are belongs to developing and it is in the bracket of 70-75 level of performance. It implies that learners in grade 5 level performed low academic performance in the ICT subject. Maybe the reasons for these results is the methods of teaching, teacher's characteristics, teacher's attitude and students' attitude toward education and its attendant effects on the academic performance of pupils as a result of the failure rate, the teaching process seems to move from teacher-centered to student-centered method of teaching, yet the story almost remain the same many studies have revealed that pupils have a poor attitude towards education and as s results of that academic performance is affected negatively. It was

disclosed of DepEd that education discourse on poor academic performance seems to be the issue of the day.

This claim was supported by Habibu et al (2016) finds out that the major barriers in teaching ICT were lack of genuine software, inadequate computer in the classroom, low-speed internet, and lack of motivation from both teacher and student side to use ICT, lack of proper training skills, unavailability of latest ICT equipment, lack of expertise of technical staff, poor administrative support and poor course.

### 2. The performance level of grade 5 learners in ICT after Inquiry-based strategies

#### Performance level

It can be deduced from the table that 3 out of 30 learners performed advance.8 and 7 performed proficient and approaching proficient. Furthermore, 8 learners performed developing and 4 learners performed beginning.

**Table 2:** Performance level of grade 5 learners in ICT after Inquiry-Based Strategies

Descriptors	Performance Level	
	F	%
Advanced	3	10%
Proficient	8	26.7
Approaching Proficiency	7	23.3%
Developing	8	26.7
Beginning	4	13.3%
Total	30	100%
<b>Average PL</b>	<b>78.31</b>	

It means that skills performed by the grade 5 learners with a performance level of 78.81 belong to development. It implies that the performance level in ICT of grade 5 learners was very satisfactory. The 21<sup>st</sup> century education support systems make it essential that in this century learning has an innovative support system to help learners involve applicable skills and knowledge, appropriate technologies, and real-world connections to make learning relevant, personalized, and engaging. The Partnership for 21<sup>st</sup> century Skills is a path-breaking organization that supports the incorporation Of 21<sup>st</sup> century skills into a learning-created framework (Larson & Miller, 2011) that includes core subjects such as "English, reading, language arts, world languages, mathematics, economics, science, geography, history and government and civics" and a

variety of interdisciplinary themes "global awareness, financial, economic, business, entrepreneurial literacy, civic literacy, health literacy and environmental literacy" (Fandino, 2013).

III. Significant difference between the performance level of grade 5 learners before and after using Inquiry-based learning Strategy.

This section presented the data that discussed the significant difference between the performance level of grade 5 learners before and after using the Inquiry-based learning Strategy. A T-test was used to determine the difference of the two variables.

Table 3

Statistical Bases	Statistical Analysis
Degree of Freedom	29
Level of Significance	5%
t-critical value	2.045
Computed t-value	4.219
Decision on $H_0$	reject
Conclusion	Significant

Table 3 presented the statistical bases and analysis which degree of freedom was composed of 29 from number of participants minus one. The level of significance is 5% or the rejection level while the t-critical value is 2.045 from t-distribution. Based from the data presented the computed value is 4.219 which means the null hypothesis is being rejected. Since the computed value is higher than the critical value it means that there is a significant difference between the performance level of grade 5 learners before and after using Inquiry-based learning strategy.

It means that the intervention being used by the researcher is effective and it is efficiently utilized by the grade 5 pupils. The decision indicated that there was significantly different from each other. This implies that the academic performance utilizing inquiry-based teaching strategy was higher than not using traditional teaching strategy in teaching ICT subjects. This means, the pupils were accepting and can really adjust to using IBTS (inquiry-based teaching strategy) in the midst of new normal classes.

This claim was supported by Donkor (2020) the study sought to examine the instructional effectiveness of inquiry-based instructional materials vis-à-vis traditional print-based instructional materials for teaching distance learners of a Block-Laying and Concreting practical skills program. An experimental design was used and participants were randomly assigned to two treatment groups: Users of inquiry-based instructional materials or users of print-based instructional materials. A researcher-designed performance test and an achievement test of 20 multiple-choice items were used to collect data from 34 participants who used print-based instructional materials and 35 participants who used video-based instructional materials to learn practical skills. The instruments were based on the instructional objectives of lessons on mortar and wall finish. Pilot test data for the achievement test yielded Cronbach's alpha of 0.84. Descriptive statistics and t-test at a 0.05 level of significance were used to analyze the data. The results indicated that the two instructional materials were pedagogically equivalent in terms of theoretical knowledge acquired. Practical skills acquired, however, were significantly higher among users of inquiry-based instructional materials. Finally, users of inquiry-based instructional materials displayed significantly superior craftsmanship.

## 6. Findings, Conclusions and Recommendations

### Findings

Based on the data gathered, the following findings were revealed:

I. 3 out of 30 garnered approaching proficiency in their performance level. Moreover, 7 pupils got the developing performance and 20 were beginning. It seems that 66.7 percent are learners who did not know how to use the computer and never know how it will be used inside the classroom.

II. 3 out of 30 learners performed advance.8 and 7 performed proficient and approaching proficient. Furthermore, 8 learners performed developing and 4 learners performed beginning.

III. Based on the data presented the computed value is 4.219 which means the null hypothesis is being rejected.

### 7. Conclusions

Based on the findings, the following conclusions are drawn;

- 1) 20 out 30 are belongs to developing and it is in the bracket of 70-75 level of performance.
- 2) The skills performed of the grade 5 learners with the Performance level of 78.81 belong to development.
- 3) The computed value is higher than the critical value it means that there is a significant difference between the performance level of grade 5 learners before and after using Inquiry-based learning strategy.

### 8. Recommendations

Based from the conclusions, the following recommendations are drawn;

1. Students may discover new concepts in ICT subjects despite from lack of resources to enhance their academic performance. Since the Department of Education, today is lack of budget to help improve the pupils in their academic performance.
- 2) 21<sup>st</sup>-century teachers may scaffold strategies to enhance the performance of the students in ICT subjects. May the results National Achievement Test of the pupils improve and may have prior knowledge in the subject.
1. The Department of Education may fully support the continuing professional development of students based on the principle of lifelong learning and DepEd's

commitment to the development of teachers' potential aimed toward their success in the curriculum.

2. Conduct related free training and seminars for the elementary teachers to help them empower and sustained their knowledge in ICT.

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