

Computer-Aided Instructions: It's Relationship on the Academic Performance of Grade 12 Students of Calawitan National High School in Practical Research 2

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Abstract: This study focuses on the relationship of the Computer Aided Instruction in the Academic Performance of Grade 12 Senior High School Students of Calawitan National High School for the school year 2022-2023. This Quantitative research is descriptive in nature. A total of 78 respondents were participated in the study, 74 students and 4 teachers. The research conducted during the second quarter of first semester for the school year 2022-2023. Survey questionnaire was used to determine the satisfaction of students and teachers. Also, the researcher formulated a series of questions that shows the relationship of computer aided instruction to the Academic Performance of Grade 12 students in the subject practical research 2. The result of the survey questionnaire were tallied and tabulated. Weight mean is used to describe the considerations of both students and teachers in computer aided instruction. And the weighted mean is range using Likert scale. The result showed that there is no significant relationship between computers aided instruction and the Academic Performance of Grade 12 Senior High School. Since the relationships are no effect in the Academic Performance it is recommended to continue the implementation of the crafted interventions to ensure. It is also recommendable for other schools with the same problem encounter to adopt the intervention made.

Keywords: computer aided instructions, academic performance, and grade 12 students

INTRODUCTION

The use of computers and other computer-related peripherals has swiftly advanced and invaded many areas of our lives, including school supplies. The ICT citizens, who are referred to as the so-called pupils of the twenty-first century, take pleasure in using it as a platform for entertainment, communications, research, and even as a tool for storage.

Principals, teachers, and parents are all attempting to make the previous resources accessible because they understand how crucial they are to children's development.

There are several fantastic sites to find educational computer programs, as well as online, in computer stores, and through textbook publishers. They enhance classroom instruction in a variety of ways. Computer programs can give a graphical representation of a subject using engaging animation, audio, and demonstration. They give students the freedom to advance at their capacity rate and tackle issues individually or in a group.

They can communicate with kids through computers, which increases responsiveness and precision. If the application provides an incorrect response, students are given guidance on how to react correctly. Compared to teacher-led or group teaching, using a computer offers a different kind of activity and a change of pace.

Children with impairments benefit more from computer-assisted learning because they get rapid feedback and stop practicing bad habits. Given that computer programs are interactive and engaging, the researcher is interested in how computer-assisted instruction affects Grade 12 students' academic performance at Calawitan National High School.

REVIEW OF RELATED LITERATURE

Based on the study of Reyes, R. C., (2013) about Academic Performance and Attitude towards Computer Aided Instruction in Chemistry, it was found that the experimental group performed better following CAI adoption; there was a notable pre-view or post mean improvement in the group's performance in Chemistry. Another important study revealed that the experimental group had a very positive attitude regarding CAI Chemistry sessions; performance and attitude toward CAI lessons were significantly correlated. It is recommended that CAN be used in the classroom to help students learn more about various chemistry and other science topics.

On a study conducted by Estrella M.M., (2020) about the Impact of Computer- aided Instruction (CAI) on the Performance of Grade 8 Students on Araling Panlipunan, it has been determined that using computers in the classroom to teach has a better effect on student performance than using chalk. It is advised that teachers use computer-assisted instruction frequently in their lessons. By attending seminars,

receiving training, and working with the school-based learning action cell, teachers should improve their skills in creating computer-aided education.

Meanwhile, in the study of Rosali, L. J. D., (2020) about the Effect of Computer-Assisted Instruction on the Academic Achievement in Secondary Physics, it has been concluded that both traditional and CAI teaching techniques considerably raise students' levels of physics proficiency. The impacts of the two approaches on academic accomplishment, however, are not noticeably different when their efficacy is compared. Consequently, CAI could be employed as a substitute teaching strategy.

In the study entitled "Effect of Computer-Assisted Instruction on Challenging Behavior and Academic Engagement", they discovered that for two of the three people, CAI was associated with less problematic behavior and higher levels of academic engagement. Furthermore, the CAI condition of one individual was linked to improved outcomes on assessments of their academic achievement. Despite favorable teacher and student evaluations of social validity, there was no evidence that the results held up. Discussions have been had regarding the drawbacks of these findings, potential directions for future study, and their usefulness.

Rogayan, D.V. Jr., Padrique, M.J., and Costalez's investigation support this. J. Can students' academic achievement and motivation in social studies be improved by computer-assisted instruction? 2021? Social studies classes commonly use technology as pedagogy in the current digital era. The COVID-19 epidemic has disrupted schooling, which has led to a trend toward technology-integrated teaching. In this one-group, preview post-test action research study, students in a public secondary school in Zambales, the Philippines, participated in a social studies course to learn about the impact of computer-assisted instruction (CAI) on academic performance and motivation. After being exposed to CAI, the students' motivation for the subject increased from a fair level (M = 3.20) before the intervention to a high one (M = 3.59). Prior to the intervention, the class's academic performance in social studies was ordinary (M = 23.18M = 23.18), but after the intervention, it was above average (M = 37.82M = 37.82). Following the deployment of the CAI, pupils' motivation and academic performance significantly improved. To increase students' interest and academic achievement, the study suggests using CAI when teaching a few specific social studies subjects. Particularly in this era of disruptive technologies and disruptive educational trends, contextualization of CAI is advised.

CONCEPTUAL FRAMEWORK

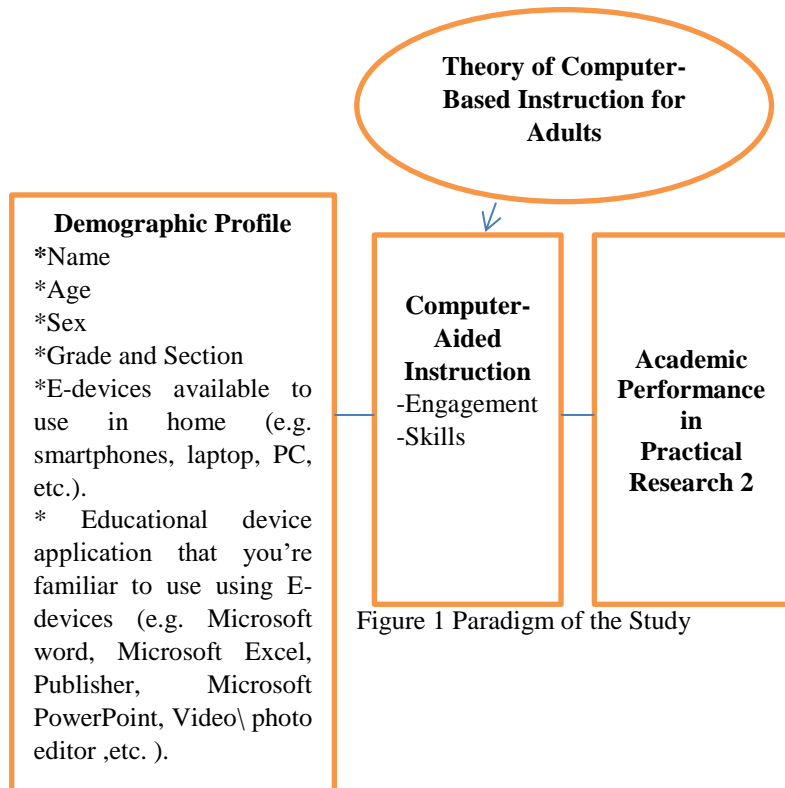


Figure 1 Paradigm of the Study

This quantitative study will determine the impact of computer-aided instruction on the academic performance of Grade 12 students at Calawitan National High School. It observed that computer-aided Instructions have contributed to society, especially for learning purposes and to create justifiable answers to this research, the researcher created questions that would help to find a solution to the said topic.

The following questions are ones that the study's authors hope to address:

- 1.) The student respondent's respondents will describe in terms of:
 - 1.1) Age
 - 1.2) Gender
 - 1.3) Grade Level
 - 1.4) Section
 - 1.5) Determine the devices that are used in making a research paper (e.g. Smartphones, Laptop, PC, Tablet, etc.).
 - 1.6) Educational device application that you're familiar to use in making a research paper (e.g. Microsoft word, Microsoft Excel, Publisher, Microsoft PowerPoint, Video\ photo editor, etc.).
- 2) Determine the extent of Computer Aided Instruction to the Grade 12 students in terms of:
 - 2.1. Engagement
 - 2.2. Skills
- 3) Determine the academic performance in terms of grades in practical research 2

4) Is there any significant relationship between computer-aided instructions and students' Academic performance?

HYPOTHESIS

The study is guided by the hypothesis that there is no significant relationship between the computer-aided instructions and the academic performance of the students in practical research 2.

SIGNIFICANCE OF THE STUDY

The findings of the study will be beneficial to the following:

Students- The results of this study could give students information on how computer-aided instruction affects their academic achievement. Additionally, it will assist students in developing their computer abilities and save the students' academic and personal success.

School Administrators- The findings of this study could aid in developing techniques by school administrators for teaching and counseling students on how technology or computer-assisted instruction affects their learning.

Teachers- The study's findings can guide teachers on how to use computer-assisted instruction. They can enhance their teaching strategies and individualize learning thanks to it. They can utilize it to maximize the instructor's time and lower the cost of tangible teaching aids and educational programs.

Parents- The findings of this study can also help parents concerned about their children's lack of study habits appropriately utilize the computer for other purposes besides learning. They will be better able to instruct their kids at home and effectively direct their education.

People in the Community- The results of this study will be helpful to the community members. They can teach them how to use computers and other technologies in their daily life. They can use this to broaden their knowledge and purchase our items in many ways.

Future Researchers- The findings of this study will help future researchers interested in this topic by serving as their foundation and background information.

SCOPE AND LIMITATION

This research employed strategic intervention such as identifying the skills and engagement of the grade 12 students in computer aided instructions in their academic performance in the subject Practical Research 2. Moreover this research employed strategic intervention such as mastery and strategy when it comes to teaching.

DEFINITION OF TERMS

The following concepts are conceptually and practically explained to aid the reader in understanding the content and setting of this study:

Academic Performance- Student achievement in a variety of academic topics is thought-out by academic performance. Normative test scores, graduation rates, and classroom performance are the typical metrics used by teachers to assess student achievement.

Computer-Aided Instruction- Computer-Aided instruction, an interactive teaching method, uses a computer to display educational content and monitor student understanding. Computer Aided Instruction uses a combination of text, images, sound, and video to enhance learning.

Information and Communications Technology- The infrastructure and parts that make up modern computers are known as ICT, or information and communications technology (or technologies).

Psychomotor Domains- These abilities must be honed via practice and are assessed according to their execution speed, accuracy, distance, and other factors.

METHODOLOGY

TYPE OF RESEARCH

This quantitative research is descriptive normative in nature. By essence, descriptive research is used to describe the characteristics of a population or phenomenon being studied. It does not answer questions about how/when/why the characteristics occurred. The characteristics used to describe the situation or populations are usually some kind of categorical scheme also known as descriptive categories (Dudovskiy, 2017). The students as respondents were selected through a random sampling; the students and belonging to the Grade 12 of the academic year 2022-2023 were considered. The teachers are practical research as respondents were selected through a purposive sampling.

RESPONDENTS

This research focused on the Grade 12 students. This research conducted during the second quarter of first semester for the school year 2022-2023. This also involved the teachers in Practical research. The data was gathered from the school form as the basis of enrollment of grade 12 students from the school year 2022-2023.

SAMPLING METHOD

Table 1 presents the distribution of the respondents included in the study. All sections were exposed to the same questionnaire. Simple random sampling was utilized in selecting the students. A total of 74 respondents were participated in the study.

Table 1. Distribution of Student-Respondents of the Study

Grade 12 Section	Number of Students		
	Male	Female	Total
Rizal	15	22	37
Luna	12	12	24
Bonifacio	10	3	13
Total	37	37	74

SOURCES OF DATA

The research approaches involve the data gathered through primary sources. The primary sources originated fully from direct collection of the questionnaire survey form from grade 12 students and Practical Research teachers respondents. It also gave reviews for the discussion of opinions and perspectives of involved parties.

INSTRUMENTS

The tool was used to gauge goals, attitudes, behavior, and success or failure. Since the respondents in practical research 2 were the grade 12 curriculum and the subject instructor, the researchers employed a survey questionnaire form. They found it simple to read the questionnaires and respond. The items in Part L of the questionnaires collect information about the respondents' profiles, including their (1.1) name, (1.2) sex, (1.3) age, and (1.4) grade level. According to the researcher's review of pertinent material, employing computer-aided education has a significant positive impact on students' academic attainment. Goal orientation was evaluated based on the respondents' responses to the presented indication for each component to determine the effectiveness of CAI to the respondents using a 5-point Likert scale. The options were: "always true of me"

(5), "often true of me" (4), "sometimes true of me" (3), "seldom true of me" (2), and "never true of me" (1)

DATA COLLECTION PROCEDURE

There are three senior high school sections at Calawitan National High School: two (2). A total of 92 students are enrolled in the General Academic Strand (GAS) and one Technical Vocational and Livelihood Section (TVL), which together make up the three sections. The formula we use to calculate the sample is $n = N / (1 + Ne^2)$, where n is the sample size, N is the population, and e is the margin of error. Out of the 92 senior high school students in the population, 74 students comprise the sample.

Data for this study were gathered using a survey questionnaire method. Each respondent received a set of questions that were standard, well-organized, and explained.

The following procedure was performed by the researchers to gather the data: (1) the researchers first requested agreement to participate in the study through a consent letter. Three instruments are included in the package.

(2) The researchers mailed the survey questionnaires to the chosen participants in this study together with the consent letter. (3) The researcher collected surveys from the respondents. In order to conduct the study, the research assistant made sure that each question was answered completely and truthfully.

ETHICAL CONSIDERATION

The researcher will be aware of and adhere to confidentiality policies as well as other ethical considerations. Appropriate coordination with the study's principal participants and other stakeholders will be treated appropriately as well.

DATA ANALYSIS

The results of the survey questionnaires were tallied and tabulated. The findings are presented in tables with the use of Microsoft Excel Program. Weighted Mean is used to describe the extent of computer aided instructions. And the weighted mean is range using likert scale.

The following verbal interpretations are used in describing the data gathered from range-scale.

Table 2 Academic Performance in Terms of Grades in Practical Research 2

GRADES IN PRACTICAL RESEARCH 2			
RANGE	FREQUENCY	PERCENTAGE	REMARKS
90-100	25	34.25%	Outstanding
85-89	34	46.58%	Very Satisfactory
80-84	13	17.80%	Satisfactory
75-79	1	1.37%	Fairly Satisfactory
Below 75	0	0%	Did Not Meet Expectation
Total	73	100%	

RESULTS AND DISCUSSION

The following contains the presentation, analysis, and interpretation of the results, which were gathered from the responses, and records of the instruments used and implementation of the interventions. The results are presented and analyzed according to the order of problems stated above.

1. How may the computer aided instructions be describe in terms of engagement and skills.

Table 3 Computer Aided Instructions in Terms of Engagement

Indicators	Mean	Interpretation
I am having a hard time learning Microsoft	3.07	Sometimes

applications (e.g. Word, PowerPoint, Excel, WPS, etc.)		
I find Microsoft Word, Excel, PowerPoint, and WPS helpful for me as a researcher	3.89	Frequently
I know how to use tools in Microsoft Word, Excel, PowerPoint, and WPS in creative way	3.67	Frequently
I know how to save backup file for my research in Google Cloud. E.g. in Drive, WPS Cloud, and in any kind of application where I can put a duplicate	3.62	Frequently
I find a computer aided instructions has a huge impact in my academic performance in practical research 2	3.86	Frequently
Average	3.62	Frequently

As can be gleaned from Table 3, computer aided instruction in terms of engagement is high as evidenced by the average of 3.62. Computer Aided Instruction is “frequently” when the learners find Microsoft Word, Excel, PowerPoint, and WPS helpful for them as a researcher (3.89), when the learners find computer-aided instructions has a huge impact in their academic performance in practical research 2 (3.86), when the learners know how to use the tools in Microsoft Word, Excel, PowerPoint, and WPS in a creative way (3.67), when the learners know how to save a backup file for their research in Google Cloud, e.g., in Drive WPS Cloud, and in any kind of application where they can put a duplicate (3.62). Meanwhile computer aided instruction is “sometimes” when the learners having a hard time learning Microsoft application (e.g., Word, PowerPoint, Excel, WPS, etc.). Generally, the results imply that the learners value highly the engagement they need to achieve or learn in order to excel in the subject practical research 2. Stated differently, they are oriented to highly learn what is there to learn in the subject area.

Table 4 Computer Aided Instructions in Terms of Skills

Indicators	Mean	Interpretation
I have enough knowledge in using different technologies like computers, laptops smartphones, etc.,	3.81	Frequently
I have my own email account and I know where I apply it	4.11	Frequently
I know a lot of sites on Google where I can find my references that can help me with my research paper (e.g. Google Scholar, Research Gate, etc.)	4.03	Frequently

I know how to use, create, and save files documents in any Microsoft application for my research) e.g. word, excel, PowerPoint Presentation, WPS, etc.)	3.88	Frequently
I prefer using Google Forms rather than printed questionnaires for my data gathering	4.05	Frequently
Average	3.98	Frequently

As can be gleaned from Table 4, computer aided instruction in terms of skills is frequently as evidenced by the average of 3.98. Computer Aided Instruction in terms of skills is “frequently” when the learners have their own email account and they know where they apply it (4.11), when the learners prefer using Google Forms rather than printed questionnaires for my data gathering. (4.05), when the learners know a lot of sites on Google where they can find references that can help them with their research paper (e.g., Google Scholar, Research Gate, etc.) (4.03), when the learners know how to use, create, and save files/documents in any Microsoft application for their research (e.g., word, excel, PowerPoint presentation, WPS, etc.) (3.88), and when the have enough knowledge in using different technologies like computers, laptops, smartphones, etc. (3.81). Generally, the results imply that the learner’s value frequently the skills they need to achieve or learn to excel in the subject practical research 2. Stated differently, they are oriented to frequently learn what is there to learn in the subject practical research 2.

- Are there any significant relationships between computer aided instructions and the academic performance of grade 12 students?

Table 5 Regression Statistics

Regression Statistics	
Multiple R	0.176743325
R Square	0.031238203
Adjusted R Square	0.017593671
Standard Error	4.083471562
Observations	73

	Coefficients	Standard Error	t-Stat	P-value	Lower95%	Upper95%	Lower95.0%	Upper95.0%
Intercept	83.41117802	2.713047408	30.74446018	9.15466E-43	78.00151513	88.8208409	78.00151513	88.8208409
X Variable 1	1.63388626	0.702794439	1.513086283	0.134696606	-0.337943685	2.464720937	-0.337943685	2.464720937

After determining the multiple R of the independent and dependent variable, it was confirmed that they have a very weak correlation. The multiple R of the subject PR2 is 0.1767. Because of the great relationship, the researcher used the T-Test.

Table 6 Test Value and Critical Value

Test Value	Critical Value
1.5342	1.992

As the results of the test that researchers made, table 6 presents the test value (1.5324) is lower than the critical value (1.992). It shows that the two variables have a very weak correlation and is considered as accepted and there is no significant relationship between Computer-Aided Instructions and the academic performance of the students.

CONCLUSIONS

In the light of the findings of the study the following conclusions were drawn:

1. The learners are frequently oriented in terms of engagement and skills in computer aided instructions.
2. The overall result presented indicates that academic efficiency of the respondents is very satisfactory. This connotes that they can perform and accomplish the tasks and activities which require skills and engagement in computer aided instructions.
3. The null hypothesis that computer aided instructions does not have any relation to the skills and engagement of grade 12 students is accepted.

RECOMMENDATIONS

1. Computer aided instructions have very important roles in our lives as a student and also as a teacher, having knowledge in computer aided makes the works lighter than the usual.
2. By Combining the computer aided to the traditional type of learning and teaching it can enhance the student's creativity and learning, meanwhile for the teachers it can also

enhance their teaching styles and strategy in teaching.

3. Future studies could seek more insight about the relationship of computer aided instructions to the students' academic performance and for the relationship of computer aided instructions to the teachers teaching style improvements.
4. Future researchers could get ideas in this paper to seek more information about the relationship of Computer aided instructions to the academic performance of a student in a particular subject which is practical research 2.

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