THE IMPLEMENTATION OF COMPUTER – ASSISTED INSTRUCTION OF ALS LEARNERS IN CALOOCAN CITY

Author : JENNY P. PABLICO

Institution: LYCEUM-NORTHWESTERN UNIVERSITY
Institute of Graduate and Professional Studies
Dagupan City

Degree: MASTER OF ARTS IN EDUCATION

Adviser : CHRISTOPHER A. DE VERA, Ed.D.

Statement of the Problem

1. What is the status of the implementation of computer – assisted instruction in Caloocan City in terms of:
a) Number and percentage of teachers trained in the use of computer.
b) Number and percentage of teachers using the computer.
c) ALS learners who are exposed to computer – assisted instruction.
2. What is the level of performance in an achievement of the ALS learners exposed to computer – assisted instruction in selected private schools in Caloocan City?
3. Based on the findings, what recommendations can be proposed to enhance the use of computer – assisted instruction ALS in Caloocan City?

Findings:

1.0. Status of the implementation of Computer-Assisted Instruction in Caloocan City.

1.1. In terms of number and percentage of trained teachers, majority of the Grade IV-VI teachers had undergone in-service trainings in line with computer-assisted instruction.

1.2. There were only fifteen (15) teachers using computer-assisted instruction in selected schools in Caloocan City.

1.3. The ALS learners are the only pupils exposed to computer assisted instruction, at the selected schools in Caloocan City.

2.0. Level of performance of the ALS learners in the Achievement Test Exposed to computer-Assisted Instruction.

2.1. The ALS learners who are exposed to computer-assisted instruction are “Fair” in their level of performance in computer instruction.

3.0. Proposed Recommendations to enhance the use of Computer-Assisted Instruction in Caloocan City.

3.1. The proposed recommendations can enhance the use of computer-assisted instruction in Caloocan City.

Conclusion:

1. Generally there is still a need to train computer Teachers in Schools in Caloocan City to enhance their competence in teaching the ALS learners along computer-assisted instruction.
2. The level of performance of the ALS learners can still be improve through the assistance of the computer teacher.
3. The proposed recommendations can help the computer-teachers to improve their computer teaching skill and competencies.

Recommendations:

1. The proposed recommendations should be forwarded to DepEd authorities for implementation.
2. The computer teachers should attend more relevant in-service trainings in line with computer-assisted instruction.
3. All schools should be provided with computer units.
4. Similar study be conducted in region, division to validate the findings of the study.

CHAPTER 1
THE PROBLEM

Rationale

As we go through the third millennium, the global community faces new challenges. In view of radical technological innovation, one of the challenges is coping with new ways of doing things. To meet the challenges of global competitiveness the elementary education curriculum set the goals of quality and excellence, relevance and responsiveness, access and equity, and efficiency and effectiveness as the main trust of the Department of Education. Education empowers people and gradually opens opportunities even to the poorest of the poor. To improve the quality of life, one has to attain quality education. (Eisma, 2013).

The desire to change stems not only from the demands to improve the quality of life, but also from the pressing need to be active participants in the fast changing world as a stipulated and mandated in the 21st century. It is necessary that schools especially in elementary education should take a less conservative role and explore the technological advance of computers. The increase in the use of computer technology in today's education has a profound effect on the future benefits in all areas of society. Futurists from all disciplines point Asia and Pacific Countries focused of the 21st civilization. We have to score some advances in our schools by integrating the new communication technologies into our traditional classroom approaches.

Unlike in the past, most public information is no longer passed from person to person, broadcast street to street by the town crier. Today, it is "mediated" through the channels of mass communication, telecom, file, video, newspapers, radio, computers, internet and cellular phones. Opinions, arguments entertainment and "social information" are all carried by the mass media. They are integral parts of modern life, learners come to school with a wide range of experiences with these multimedia texts. All these day to day experiences become part of the learners schemes.

And as a part of media education, computer assisted instruction for learners, bring an enormous amount of prior attention for they have already in a certain sense become the " experts ". As students argue and discuss about various experiences, it is crucial that teachers come to reorganize and validate the knowledge students have already done. This kind of change will require integrating traditional education into the future of digital technologies. Among the challenges that educators face as they approach the digital is to know how to effectively and creatively make learners have access to modern technology to significantly impact towards their instructional needs.

Keeping up with the advancements of technology is to keep up with development. As cited by Noble (2002) ,recent year's changes in elementary education show that we have entered a new era in education, one

which is rapidly drawing the halls of basic education into the age of automation which is often justified as an inevitable part of the new "knowledge-based" society. The computerization of all aspects of society has made computer literacy a must for officials and employees and future recruits in government and non–government organizations. Everyone should study the basics underlying ICT operation and applications in order to remain competitive in the job market and to keep up with the trend. This demands trained personnel in the ICT particularly in computers, and that of economic development can also be attained by having a pool of trained personnel in the ICT industry (Newsweek, January 2015).

Today, teachers are considered as the keystone of the country's bid to become globally competitive so they must, and foremost, acquire world class knowledge and skills in order to develop the quality of specialists and manpower required to launch the economy on a half – growth path (Eisma, 2013). Teachers encounter problems especially on how they can possibly enhance better transfer of learning, considering the nature and background of the learners and how they can possibly cater to the learners needs.

Andong and Florencio (2018) suggest that teachers should spend a great amount of time in learning some basic skills in computer literacy, act as resource persons, or ICT coordinators. Professional development will encourage teachers to collaborate in developing their subject curriculum and identifying innovative teaching methodologies. Opportunities for learners and teachers to experiment on identifying preferred learning styles and differentiated pathways are encouraged. Infusing Information and Communication Technology (ICT) across the basic curriculum to enhance learning and the management of learning leads teachers to an understanding of how to transform their teaching skills and competencies as well as the learning of their learners participation.

The Department of Education (DepEd) agreed on what Andong and Florencio suggested by implementing the DepEd Computerization Program in different years (2013, 2014, 2016,)by distributing computer packages consisting of computer hundred (600) public elementary schools nationwide to enhance and improve the skills of the teachers.

A learner-centered computes environment could enhance the acquisition of information processing skills by learners and could help transform the education process into a more humane and learner – centered one. Computers are perceived as a powerful teaching aid and used mainly to amplify or extend human capabilities. Computer applications are designed to increase the efficiency and effectiveness of the instructional process and hence, reinforce the existing goals and practices.

Software programs illustrate concepts more clearly through this technology than through traditional means such as lecture, discussion, or conventional laboratory activities. CAI also economizes on facilities, material and instructional time. In short, CAI is a learning aid rather than a teaching aid. Education has to center on how learners learn. Teachers cannot lead the learning alone .They can only encourage the learning process by presenting ways of knowing, thinking and finding out about the world among their learners. Through doing, seeing and manipulating symbols, learners construct their own realities and their own understanding.

One of the alternatives that teachers can use is the Computer – Aided Instruction also known as CAI. In CAI, the teaching process emphasizes learning rather than teaching. It allows learners to learn directly from a computer, learners should, therefore, must have access to exchange, and process information independently with the teachers at their own pace.

Information that helps teach or encourage interaction can be presented on computer in the form of text or in multimedia formats, which include photographs, videos, animation, speech, and music. The guided drill is a computer program that poses questions to students, return feedback, and selects additional questions based on the students' responses. Recent guided drill systems incorporate the principles of education in addition to subject matter knowledge into the computer program (Torio, 2012).

It is on this account that the researcher was motivated to conduct this study on the implementation of computer-assisted instruction in the selected learners in Caloocan City.

Theoretical Framework

The Engagement Theory (Kearsly, 2011) explained that learners must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks. Technology can facilitate engagement in ways which are difficult to achieve. It is intended for technological – based learning and teaching. Engagement theory is different from many older models of computer –based learning in which the emphasis is on individualized instruction interactivity. Engagement theory does promote interaction, human interaction in the context of group activities, not individual interaction with an instructional program. The latter form of interaction tended to be measured by single responses whereas engagement requires assessment of larger units of work (e.g., reports, programs, user satisfaction).The difference between engagement and interactivity reflects the shift in thinking about computers in education as communication tools rather than as some forms of media delivery devices. Furthermore, engagement theory places a great deal of emphases on providing an authentic (i.e., meaningful) setting for learning, something not present in previous models.

The largest benefit of technology is the easy and fast access that has come from the Internet .Almost any subject matter, research papers, and technical documents are available to anyone. Communication has also become much simpler through the use of the Internet. It can be said "that e- mail does not replace or reduce traditional communication; in fact, such interaction increases". Discussion lists also allow learners to tap into expertise that otherwise would have been inaccessible. Instead of relying on a learners in an adjacent seat for information, one command sends a plea for help to the entire class, usually resulting in at lea ful of responses within a few hours (Luke, 2010).

Conceptual Framework

The legal bases used in this study was the 1987 Philippine Constitution, Republic Act 9155 which is the Governance Basic Education Act of 2001 and DepEd Order, s. 2010.

Section 10 of Article xiv of the 1987 Philippine Constitution mandates that "Science and Technology are essential for national development and progress. The State shall give priority to research and development, inventions, innovation, and their utilization; and to Science and Technology education, training and services.

"The legal basis was further strengthen by RA 9155 – Governance of Basic Education Act of 2001 where it was mentioned in Rule 1 of Section 1.1 that all educational institution shall broaden scientific and technological knowledge and promote vocational efficiency. The department of Education Order No. 76 series of 2010 entitled Policy Guidelines on the implementation of the 2010 in both Elementary and Secondary Education Curriculum states; that there is a need to improve the areas of national learning strategies, school based management, teacher education and development, resource mobilization and management, and quality management system, among others as a demonstration of DepEd's commitment to provide the learners the best education that they deserve".

Figure 1 on the next page presents the paradigm of the conceptual framework of the study; using the Input – Process – output model.

The input consist of the status of the implementation of Computer – Assisted instruction in Caloocan City in terms of number and percentage of teachers trained in the use of computer; number and percentage of using the computer and ALS and Grade 5-6 learners who are exposed to computer – assisted instruction. Also included in the study is the level of performance in an achievement test exposed to computer assisted instruction in selected schools in Caloocan City. The output of the study is a propose recommendation to enhance the use of computer – assisted instruction in Caloocan City.

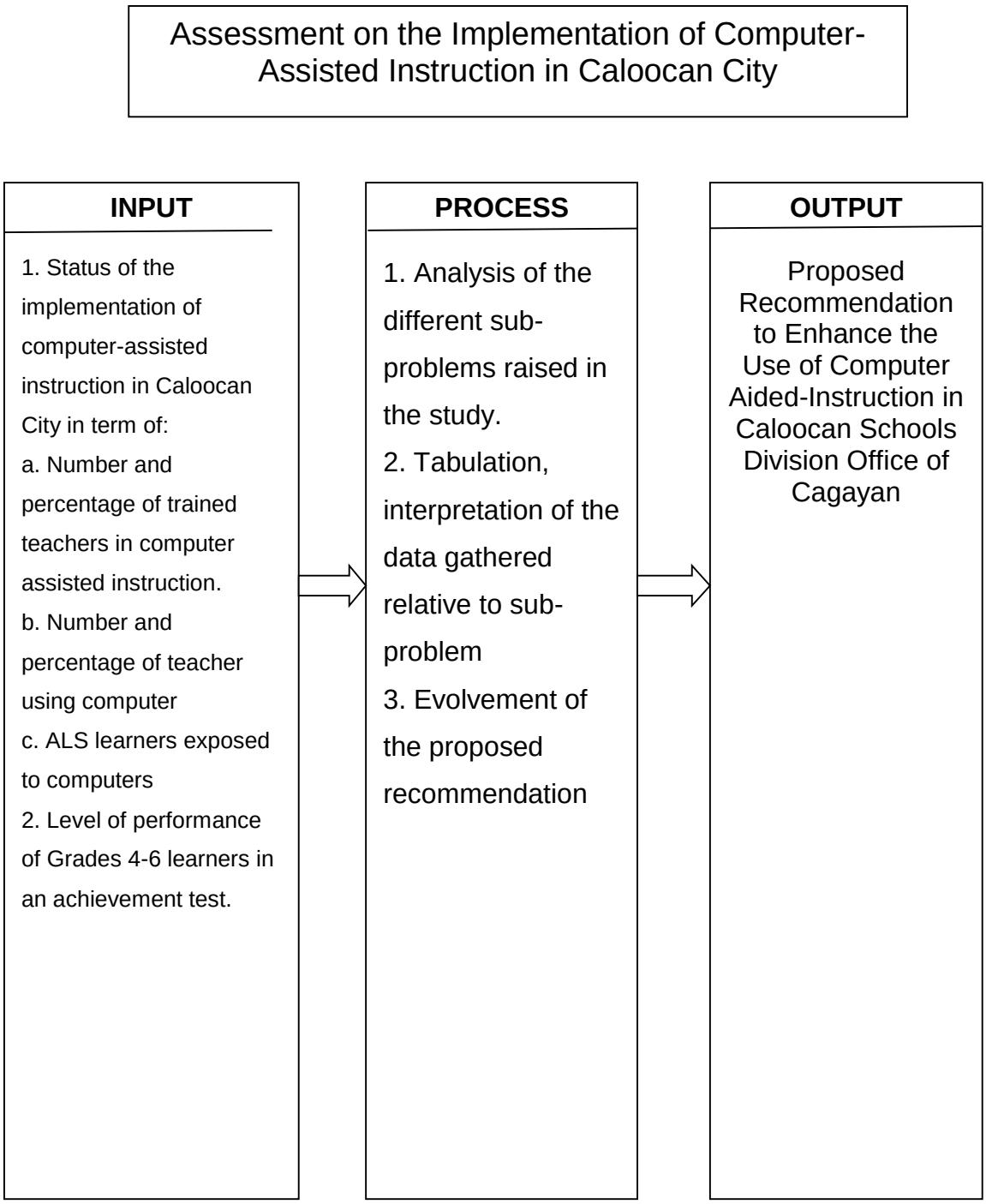

Figure I
Schematic Diagram of the Conceptual Framework of the Study

Statement of the Problem

This study assessed the implementation of computer – assisted instruction in ALS in Caloocan City during the school year 2024-2025.

Specifically, it sought to answer the following sub-problems:

1. What is the status of the implementation of computer – assisted instruction in ALS in Caloocan City in terms of the following:

a) Number and percentage of ALS teachers by school trained in the use of computer.
b) Number and percentage of teachers using the computer.
c) ALS learners who are exposed to computer– assisted instruction.

2. What is the level of performance in an achievement of the ALS learners exposed to computer – assisted instruction in selected schools in Caloocan City?
3. Based on the findings, what recommendations can be proposed to enhance the use of computer – assisted instruction ALS in Caloocan City?

Basic Assumptions

This study is anchored on the following basic assumptions:

1. The implementation of computer – assisted instruction in Caloocan City can be fully implemented.
2. The level of performance of the learners with computer – assisted instruction can still be improved.
3.

Scope and Delimitation of the Study

The main concern of this study is to assess the implementation of computer – assisted instruction in Caloocan City. The study involved all ALS to 6 learners in selected elementary schools in Caloocan City. The implementation of the computer – assisted instruction was limited to the status of the implementation of computer – assisted instruction in terms of the number of trained teachers in computer, number and percentage of teachers expressed to computer – assisted instruction and the Grades of learners who are exposed to computer – assisted instruction ; and the level of performance of the ALS to 6 learners in an achievement test exposed to computer = assisted instruction in selected school in Caloocan City. Based on the analysis of the findings, a proposed recommendation to enhance the use of computer – assisted instruction in Caloocan City. The implementation of the proposed recommendation beyond the limit of this study, due to time constraints.

Significance of the Study

The findings of this study would be a great help to the following:

The School Administrator. The result of the study would encourage them to be involved in curriculum development to help the computer teachers and to direct having to the needs and abilities of the learners.

The Computer Teachers. This could lead them to a more efficient and productive use of the teacher's time.

The Learners with Computer – Assisted Instruction: They will be benefited who are end the beneficiaries of the proposed recommendations.

The Researcher Himself. As future computer teacher, she has made aware of the level of performance of the Grade learners she is teaching, and likewise to improve computer instruction by the teachers.

Other Researcher. This will serve as frame of reference to validate the findings of the study.

Definition of Terms

The following terms used in this study are operationally and /or logically defined.

Computer- Assisted Instructions. It refers to the subject offered in the Basic Curriculum taken by ALS to 6 learners.

Computer Teachers. There are the teachers, who are teach computer –assisted instruction and respondents of this study.

Caloocan City. It refers to the locale of the study where the teacher respondents are presently teaching during the conduct of the study.

Implementation. It refers to way or made of carry out providing or fulfilling to improve conditions of school program.

Level of Performance. It refers to the academic performance of the ALS learners in an achievement test with computer assisted instruction.

LITERATURE

Computers in the 21st Century

Stair (2018) aptly described that computers have had profound on education in general. He introduced the term computer literacy and compare that knowledge of computer systems is as important as knowledge of Basic English and Math. He also certified that any student who does not receive some type of computer related schooling is illiterate and ill – prepared to face life.

O ' Leary (2014) agreed in the book of Stair in which he described how 20th century brought us the dawn of Information Ageb and continued to bring us the dawn of Information Technology. He also emphasized that the indication of rapid rate of change will not be slowing but increasing. The computer literacy on the 21st century will be undoubtedly become prerequisite in whatever a career a student chooses.

The ability of even modest computer systems to store , organize , and retrieve very large amounts of information brought about changes in a very nature of many business offices. Indeed many industrial, academic, and governmental processes have been irrevocably changed by the computer.

Computers have begun to meet the barrier imposed by the speed of light in achieving higher speeds. This has led to research and development in the arms of parallel computers. Continuing demand for more processing power has to lead significant changes in computer hardware and software architectures, both to increase the speed of basic operations and to reduce the overall processing time (Encyclopedia of Science and Technology, 2017).

The website http://www.indianchild.com/computers_blessing_or_curse.htm talked about the computer education concerning our young children. They explain how children affect in using computer. They are growing up computer literate and will have that a huge advantage. Computer literacy is becoming a huge job qualification and feeling comfortable with one will put them a step ahead. Computers also criticized in this web site and explain the bad effect in using computers. Children are learning to read and write with computer games instead of house made flash cards. They are reading their bedtime stories online instead of in bed with their parents. Slowly traditions are being broken and computer is becoming a child's learning tool. Many parents are buying computers learning games instead of board games and pop – up books.

Over all, children can benefit from computers if they are used wisely. Parents that supervise their children when they are on the computer can ensure that everything is happening safely.

In the article of Freeopp (2017), he discussed that computers are prevalent in every household and business today. He explained how computers explode in the business like requiring all employees to have computer skills. A computer with thru proper business software can keep business running very smoothly. From scheduling appointments to printing receipts and tracking sales, computers have become a necessity and a valuable asset for most business today. And whether a person or company has a typical brick and mortar business or a home business, the time saving aspect of using the computer pays for itself. Additionally, with today's need for business to have an online presence, more businesses have increased their sales and clientale by developing a business website.

Deped Computerization Program

The government not only concentrates on the use of ICT in procurement procedures but it is also integrated in education. The Department of Education released DepEd Memorandum No. 125 Series of 2018, entitled "Implementation of the 2013, 2014, and 2016, DepEd Computerization" which the Department distributed a computer package consisting of computer hardware and software and teacher training for six hundred (600) public Elementary schools nationwide. In this case, computer education was incorporated in the school curriculum to enhance the skills of the students.

The news entitled AMA Boosts Computer aide Instruction (http://www.ames.edu.ph/news/sept2003/090803.htm) emphasized that they will train the faculty members to construct CAI headed to start the new teaching methods.

Technology Information and Communication

Information and communication Technology (ICT) as an essential tool for development will help shape a new better mental model through wider access to better information and resources and greater connectivity that eliminates isolation and ignorance of today's world. It can become a beneficial source that empowers individuals, communities, and nation to better manage their lives. (Anderson and Yerbury, 2010).

In the field of education, according to Queau (2010), information technologies are viewed as a means of complementing traditional educational techniques to enable education systems to adapt or the different learning and training needs of societies. Computer simulation, telematics, teleconferencing, aloof side educational TV or radio, have great potential to reach larger audiences than to traditional classroom process, and to make learning effective , attractive and stimulating . The increasing variety of interactive media enlarges the scope and possibilities of self – directed learning.

Moreover, Anderson and Yerbury (2010) asserted that in the context of an emerging global information society, information literacy is increasingly presented as a key challenge to educators and to educational authorities. School library media specialists worldwide have responded energetically to this challenge. Today school library are increasingly based on the assumptions that information skills instruction is a valuable and essential part of the school's education programs; that these skills of location and access to library resources; that these skills should be taught within the context of the school's curriculum; and that teaching of these skills can be enhanced by the use of innovative instructional methods.

Co (1997) said that today, educational media have become standard component of effective teaching. There are those that are already available in education but still, development of new media technology continues. She stressed that through this, the teachers communicate their ideas to their students so that can form their opinions.

Teaching is a tough job and teachers deserve support. Technologies can help provide such support. There are new possibilities for new technologies like the internet and web, which incorporate and extend the scope of older technologies. Taken together, these technologies can help motivate and empower teacher, assist them with their day- to – day situations, provide avenues for lifelong professional development, and in short can enrich teacher work lives and enhance their effectiveness (Jackson, 2010).

While advocates of innovation focused on the need to reform Philippine schools to meet the needs and demands of society, little has done to remedy the roadblocks to quality education. In the last century, curricular reforms swept the world in response to the great demands of information, communication technology. The Philippine is no exception to the need to redirect its educational programs.

The Role of Computer Education Today's Teaching
And Learning Computer Education

Learning has been highly compartmentalized into subject areas. Students have typically been treated as if they are all the same things at the same time. They also have been forced to the passive members of their community. These features of our educational system must all change for they are counter – productive, harmful to our people, our society, especially in the information age (Reighluth, C.M. 2018).

In the advent of information and communication technology, the need for a new paradigm in education is necessary. The use of technology has growth dramatically to help motivate students making them active participants in their own education.

Learners will benefit from ICT as they can alter the sequence of a process and put them together in another way and put their solution on a visual or animated way. With these interactive programs students can construct their interpretations and make a representation of their thinking and review the stages of their reasoning.

Today computers are used for learning challenges so as to make information more meaningful. With computers we can help develop multimedia instructions which provide the opportunities to use higher order cognitive strategies such as metacognitive procedures and mental modeling to promote complex learning and transfer. (John and Reeners, 2000; Osman to Hannafin, 2002)

Computers is said to be man's most incredible invention with its extensive capacity to control and manipulate information. Its ability to control and manage wide variety of media arts gave way to the introduction of Computer – Aided Instruction popularly known as the CAI .Importance of Instructional Materials.

Instructional materials are essential in the development of the learners. Teachers just use whatever instructional materials are available and are suited to the learning objectives. In consonance with the above statements, Gagne (2013) and Kinsella (2016) concluded that some instructional principles that include instructional materials are special venue to transform through education. Such instructional materials hold promise of helping teacher achieve flexibility in meeting the difference among learners. Such activities include model building, independent study and laboratory experimentation. He believed that when a person who use instructional materials have a major part of choosing them, the usefulness of such resource is really assured.

Victor (2017) defined instructional materials as means to an end. They are not made ends in themselves. As means, an instructional material must be designed and selected to accomplish a specific purpose. Its chief purpose is to implant ideas in the minds of the students and help them understand specific concepts. These concepts will aid the student in his attempt to interpret his surroundings for him to live effectively within the environment and to exert a measure to control his environment.

Feature of CAI Programs for Teachers and Student

Orilia (2018) enumerated some features of Computer Aided Instruction that a student will never regret to use. (1) It lets the students proceed at their own pace as they can utilize CAI whenever they choose. (2) Student can repeat a CAI a study unit any number of times until they master it. (3) The self-testing portion of each CAI module lets the students gauge his/ her progress. (4) It also gives the teacher a record of that student's performance. (5) Students can also use CAI to review tests.

The website http://www.xu.edu.ph.mawi.chap2. Htm (2012) provided five methods of delivering CAI, namely: drill and practice, tutorial, demonstration, simulation, and instructional games.

Drill and practice is a method very common and used to increase fluency in a skill or body of knowledge or to reinforce an existing skill or body of knowledge. This type of CAI is good for basic knowledge where rapid student response is desired.

In a tutorial, the computer instructs and introduces new content to learners in the same way a teacher would in a one – on one situation. It is used in any area of remediation when learners lack necessary background knowledge, enrichment when learners wish to go beyond what is basic, introduction of content to all learners. Demonstration sometimes called presentations and used as aid to the teacher in the primary instruction of students.

A simulation model imitates a real or virtual system based on the theory of the model. It is used to simulate a particular environment and test effects of various interventions on the environment.

Instructional games are designed to be fun for students which increase the chance of learning concepts, knowledge or skill embedded in the games.

Sanders (2015) identified the simplest and most used form of CAI and that is drill and practice approach, designed to complement instruction received from teachers, printed materials, and other non-computer sources. Student responses are given factual questions presented by the computer. The drill and practice has been found useful in learning areas such as mathematics, statistics, language, reading, spelling etc., where substantial memory work is required.

Lexicon Universal Encyclopedia (2017) concluded that some CAI programs are embedded in an entertaining like context that holds the student attention on academic work.

Because of this Arnold (2002,http://www.concentric.net/) formulated the advantages of CAI. (1) Student benefits from the immediate responsiveness of computer interactions and appreciates the self – paced and private learning environment .(2) Computer learning experiences often engage the interest of students, motivating them to learn increasing independence and personal responsibility of education. (3) CAI is

successful in raising examination scores, improving student attitudes and lowering the amount of time required certain materials.

If there are advantages, he also emphasizes some disadvantages that affect CAI. (1) CAI has not been very effective in abstract reasoning and problem solving processes. (2) Difficulty and expense of implementing and maintaining the necessary computer system. (3) Student failures can be traced to inadequate teacher training in CAI systems.

It is not merely the advantages and disadvantages of Computer Aided Instruction to be emphasized but also benefits the affect the students and teachers. The website Oxford enumerates the following benefits. 1.) Difficult concepts are made easier to understand, 2.) Enhances retention of knowledge, 3.) Greater teaching effectiveness improves exam pass rate, 4.) Greater teaching effectiveness means that the classroom teaching content of course can be reduced, 5.) Delivers effective English-language based training to students whose mother tongue is not English, 6.) Greater standardization of instruction, and 7.)New instructors become operational more rapidly that with traditional teaching methods.

As (http://news.bbc.co.uk/hi/education/2368013.stm) reported that using computer software for instruction in the classroom were improving the skills of student at 0.5% it emphasizes that training teachers use computers as tool to help them in teaching.

STUDIES

With respect to instruction to instruction, very few research studies have not proven the efficacy of computers in the student achievement and attitude toward learning. However,when computers are used appropriately as a supplement to conventional instruction, it would give good results as revealed by the related studies presented herein.

The research entitled "Computer Aided Instruction –Some Reflection" (http://www.psychology.unp.ac.za.computai .htm) emphasized that large number of students who lack computer literacy have problems when implementing computer based courses.

Urbano (2017) conducted a study entitled Development and Evaluation of Computer Assisted Instruction Modules of Chemical Bonding and Molecular Chemistry". The study aimed to evaluate the subject matter, objectives, clarity and explanation, presentation and appeal to the students and test items of the prepared modules. Special features of the CAI modules were use lively colors in the screen design use of animated cartoon characters that served as participants in the conversational format of the lesson .The modules were found to be effective as revealed by the results of the pre and post test administered to the students.

A Computer Assisted Instructional Material in Differential Calculus was develop and validated by Bagarino in 2000 to supplement the prescribed textbook and the traditional learning activities in the said course. Questionnaire and opinionative were to the gather the needed data. The questionnaire was accomplished by the teacher respondents to elicit their evaluation as to the degree of the need of the topics generally taught in Differential Calculus. The opinion was used for both student and teacher respondents to give this assessment as to the acceptability of the materials along content, organization, presentation, effectiveness, language and style and relevance. Finding revealed that both student and teacher respondents have highly acceptable on the different aspects concerned.

The thesis of Frias (2014) entitled "Development and Validation Modules on Basic Ecological Concepts for Science and Health VI" used Research and Development method in conducting her study. The materials were evaluated based on the following criteria: objectives, content and organization, procedure and methodology, usefulness, effectivity, illustration / Drawing, /Diagrams and evaluated exercises under the Experts' Assessment Checklist.

The findings of the study include the improved performance of the students who used the modules on the Basic Ecological concepts for Science and Health VI. In the light of these findings, she recommended that school administrators should conduct a seminar in the preparation of modules to improve teaching learning process.

Torio (2012) sought to proposed computer– aided instructional materials in Algebra for first year college students of the Lyceum- Northwestern University during the second semester of the school year 2011-2012.Specifically it attempted to determine the level of performance of the first year college students in Algebra based on their Final Examination .It likewise looked into the level of proficiency of the first year college students in the use of the computers as perceived by themselves and their computer instructions. Furthermore, it determined if there is a significant difference in the perceptions of the first year students and their Computer instructors on the level of the proficiency of the students in the use of computers. Based on the findings, it proposed computer – aided instructional materials in the teaching of Algebra for first year college students. Finally, it attempted to determine the appropriateness and feasibility of the computer- aided instructional materials based on the evaluation of the Mathematics and Computer instructors of the College of Engineering and Computer Science at the Lyceum – Northwestern University.

The descriptive and developmental methods of research were used in the study. It analyzed the documents on the test results of the first year students in Algebra. It likewise used a Likert- type questionnaire for the College instructors to obtain the data and information on the extent of proficiency of the students in the use of computer. This study, likewise used a checklist administered to the College instructors for the purpose of evaluating the proposed computer – aided instructional materials in Algebra for first year college students.

The mean, mean percentage score, frequency count, average point value and the t-test were used to treat the data statistically.

Based on the findings, Torio drew the following conclusions; learners in Algebra needs improvement, the proposed computer aided instructional materials in Algebra for first year college students are appropriate and feasible and can raise the level of their performance.

Researches on internet entitled Evidence in Support of Technology (http://www.pe.net ~ mltew/educi.htm) formulate the effectiveness of CAI on learning time, achievement, and attitudes.

The most consistent finding is a reduction in learning time. In military studies, studies who used CCAI averaged 30% time savings and showed achievements results to those traditional instruction. In elementary and secondary studies, there is also finding at students learn a given amount of material up to 88% time savings In terms of achievement, results are generally positive. A summary of 51 CAI students concluded that over all those studies, CAI students would average a 13 percentile point gain over traditional students if all the separate results were converted to the same norm referenced test.

Finally, in virtually all CAI studies, student show very positive attitudes towards computers. They enjoy the ability to move at their own pace and the lack of embarrassment over mistakes. They also feel increased control over the learning process.

CHAPTER 2
METHODOLOGY

This chapter presents the research design, sources of data, instrumentation and data collection and tools for data analysis relative to the different sub-problems raised in the study.

Research Design

This study used the descriptive methods of research with the use of the questionnaire as the main data gathering instruments in the assessment of the implementation of the computer-assisted instruction in ALS and Grade 5-6 in Caloocan City during the school year 2024-2025. The assessment included the status of the implementation of the computer-assisted instruction in ALS and Grade 5-6 in Caloocan City in terms of the number of percentage of ALS and Grade 5-6 trained teachers in use of computer; number of percentage of ALS and Grade 5-6 teachers using the computer-assisted instruction and level of performance of ALS and Grade 5-6 learners who are exposed to computer-assisted instruction. The output of the study is proposed recommendation to enhance the use of computer assisted instruction in Caloocan City.

Sources of Data

The main source of data were the ALS learners in Caloocan City. Table 1 is the distribution of subject respondents.

Table 1
Distribution of Respondents by Grade Level
N=75

Grade Level	Number of Subjects Respondents
Grade V	20
Grade VI	25
ALS	30
Total	75 Learners

Instrumentation and Data Collection

The main data gathering instrument was a set of questionnaire relative to sub-problems raised in the study. Part I- deals in the status of the implementation of computer-assisted instruction in Caloocan City using variables, number and percentage of teachers trained in the use of computer; number and percentage of the teachers using computer and grades of learners who are exposed to computer assisted instruction. Part II – the level of performance of the ALS to 6 learners with computer-assisted instruction using the test results in an achievement test. After formulating the questionnaire the researcher showed to her thesis adviser for his suggestions which was incorporated in the final draft of the questionnaire.

The researcher asked permission to the Schools Division Superintendent Schools Division Office of Cagayan to float/administer the questionnaire to the ICT respondents, after which the researcher distributed the questionnaire with the assistance of the school heads in the different schools in Caloocan City. The researcher personally distributed and retrieved the questionnaire to ensure 100% retrieval.

Tools for Data Analysis

The different sub-problems raised in the study was tabulated and analyzed and interpreted. For sub-problem 1 and 2 frequency and percentage was used. The formula is:

$$P = \frac{f}{N} \text{ X } 100$$

Where:
P= percentage
F= frequencies
N= total number of respondents

CHAPTER 3
PRESENTATION, ANAYSIS AND INTERPRETATION OF THE DATA

This chapter presents the analysis and interpretation of the data gathered relative to the different sub-problems raised in the study.

Status Of The Implementation of Computer- Assisted Instruction In Caloocan City

This section presents the status of the implementation of Computer-Assisted Instruction in Caloocan City. Table 2, presents the data in answer to sub-problem 1.

Table 2
Status Of The Implementation of Computer Assisted Instruction In Caloocan City In terms of Number of Teachers Trained with Computer Assisted
N= 30

School		**Percent**
Grace Park ES (Main)	4	13.33
Kasarinlan ES	4	13.33
Kaunlaran ES	4	13.33
Lerma Elementary School	5	16.67
Libis Talisay ES	5	16.67
Maypajo ES	4	13.33
Sampalukan ES	4	13.33
Total	**30**	**100%**

Table 2, presents the status of the implementation of computer assisted instruction in Caloocan City in terms of number of teachers trained with computer assisted. It must be noted from the table that are only fifteen (15) teachers trained in computer assisted instruction and coming from different schools in Caloocan City, This implies the need to trained more teachers in computer-assisted instruction if only to realize the value of computer instruction.

Table 2 b
Status Of The Implementation of Computer Assisted Instruction In Caloocan City In Terms of Numbers and Percentage of Teacher Using Computer

School		Percent
Grace Park ES (Main)	4	13.33
Kasarinlan ES	4	13.33
Kaunlaran ES	4	13.33
Lerma Elementary School	5	16.67
Libis Talisay ES	5	16.67
Maypajo ES	4	13.33
Sampalukan ES	4	13.33
Total	**30**	**100%**

Table 2b presents the status of the implementation of computer assisted instruction in Caloocan City in terms of numbers and percentage of teacher using computer. It must be noted from table 2.b that all the identified schools used computer assisted instruction and it is therefore imperative that fifteen (15) teachers who were trained should implement and teach using computer in their respective schools. However, with the member of teachers in the district there is still a need to procure more computers and to train more teachers along computer-instruction as the thrust and program of the DepEd.

Table 2 C
Status of the Implementation of Computer-Assisted Instruction to ALS to 6 Learners Exposed To Computer Assisted Instruction
N=75

Grade Level	F	Percent
ALS	20	26.67%
Grade 5	25	33.33%
Grade 6	30	40.0%
Total	75	100%

Table 2c presents the status of the implementation of computer-assisted instruction to ALS to 6 learners exposed to computer assisted instruction in Caloocan City.
Going over table 2C the ALS teachers using computer-assisted instruction revealed that the ALS to 6 learners had no difficulty in teaching them in the use of computer for reasons that all of them are exposed to computer not only in school also at home or within their environment. This means that there is a need to expose other ALS learners in other schools, since they will also be the end-beneficiaries of the computer program which is the target of the DepEd, that all learners will be exposed to computer-assisted instruction.

Level of Performance of the ALS to 6 Learners
In An Achievement Test Exposed To Computer

This section presents the level of performance of the ALS to 6 in an achievement test exposed to computer. Table 3 presents the data in answer to sub-problem 2.

Table 3

Performance Level In Achievement Test	**F**	**Percent**
Grade IV		
Very Good	5	25%
Good	5	25%
Fair	10	50%
Total	**20**	**100%**
Performance Level	**F**	**Percent**
Grade V		
Very Good	5	20%
Good	5	20%
Fair	15	60%
Total	**20**	**100%**
Performance Level	**F**	**Percent**
Grade VI		
Very Good	10	33.33%
Good	8	26.67%
Fair	12	40.00%
Total	**30**	**100%**

Table 3 presents the level of performance of the ALS to 6 learners in an achievement test exposed to computer-assisted instruction. It must be noted that the ALS learners' level of performance belonged to "Fair ". Majority of the Grades 4 had a performance of "Fair" 10 or 50 percent; Grades 5 "Fair" 15 or 60 percent and Grades 6 "Fair" 12 or 40 percent. This implies the need to improve their level of performance in computer while it must be noted that the learners were already exposed to computer- assisted instruction, still they got fair performance level.

Proposed Recommendation to Enhance the Use Of
Computer-Assisted Instruction in Caloocan City, Division of Pangasinan

This section presents the proposed recommendations to enhance the use of computer-assisted instruction in Caloocan City. This is to answer the sub-problem 3.

The propose recommendation to enhance the use of computer –assisted instruction in Caloocan City was based on the analysis of findings made in this study. The researcher came up to recommend the different areas of concerns which needs to be addressed by DepEd Higher Authorities.

Areas of Concerns	Recommendation
A. Level of Performance	A. More practice exercises be given to the learners as reinforcement for them to work on. − procurement of computers for every schools needing computer − conduct of in-service trainings for computer teachers to gain more knowledge and skills in using computer-assisted instruction in their respective classroom.
B. Teaching Strategies	B. Provide different teaching strategies to improve the level of performance of the ALS learners and be exposed to their environment − Adopt various strategies in the teaching of computer − Give assistance to the non-computer learners as to improve their level of performance. − Exposed non-computer learners to an environment where computers are made available with the guidance of computer teacher

CHAPTER 4

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings, the conclusions drawn and the recommendations offered based on the findings and conclusions relative to the different sub-problems based on the study.

SUMMARY

This study used the descriptive method of research using questionnaire as the main data gathering instrument in the assessment of implementation of computer-assisted instruction in Caloocan City during the school year 2024-2025. The assessment focused on the status of the implementation of computer-assisted instruction in Caloocan City in terms of number and percentage of trained teachers using computer and the grades of learners who are exposed to computer-assisted instruction and the level of performance of the ALS learners in an achievement test exposed to the computer-assisted instruction. The output of the study is a proposed recommendation to enhance the use of computer-assisted instruction in Caloocan City. The Seventy - five (75) ALS learners served as subject respondents and fifteen (15) computer teachers as respondent of the study. Frequency and percentage count was used to treat the data in the different sub-problem.

Findings:

1.0. Status of the implementation of Computer-Assisted Instruction in Caloocan City, Division of Pangasinan.

1.1. In terms of number and percentage of trained teachers, majority of the ALS to 6 teachers had undergone in-service trainings in line with computer-assisted instruction.

1.2. There were only fifteen (15) teachers using computer-assisted instruction in selected schools in Caloocan City.

1.3. The ALS learners are the only learners exposed to computer assisted instruction, at the selected schools in Caloocan City.

2.0. Level of performance of the ALS learners in the Achievement Test Exposed to computer-Assisted Instruction.

2.1. The ALS learners who are exposed to computer-assisted instruction are “Fair” in their level of performance in computer instruction.

3.0. Proposed Recommendations to enhance the use of Computer-Assisted Instruction in Caloocan City.

3.1. The proposed recommendations can enhance the use of computer-assisted instruction in Caloocan City.

CONCLUSION

Based on the findings the following conclusions were drawn:

1. Generally there is still a need to train computer Teachers in Caloocan City to enhance their competence in teaching the ALS learners along computer-assisted instruction.
2. The level of performance of the ALS can still be improved through the assistance of the computer teacher.
3. The proposed recommendations can help computer-teachers to improve their computer teaching skill and competencies.

RECOMMENDATIONS

Based on the conclusion drawn, the following recommendations are hereby offered:

1. The proposed recommendations should be forwarded to DepEd authorities for implementation.
2. The computer teachers should attend more relevant in-service trainings in line with computer-assisted instruction.
3. Procurement of computer units through MOOE and local school board fund.
4. All schools should be provided with computer units.
5. Similar study be conducted in region, division to validate the findings of the study.

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A P P E N D I C E S

APPENDIX A

Lyceum Northwestern University
Dagupan City

The Schools Division Superintendent
Schools Division Office of Caloocan
Caloocan

Madam:
Greetings

Presently I am conducting an research work entitled **"THE IMPLEMENTATION OF COMPUTER-ASSISTED INSTRUCTION IN CALOOCAN CITY**" in partial fulfillment to the requirements for the degree **MASTER OF ARTS IN EDUCATION** at the Lyceum Northwestern University, Dagupan City.

In this connection, may I asked permission from your good office to administer my questionnaire to the ALS computer teachers teaching in Caloocan City.

Thank you very much and looking forward for your favorable action.

Very truly yours,
(Sgd.) Jenny P. Pablico
Researcher

Noted:
(Sgd.) Christopher A. De Vera, ED.D
Adviser

Approved:
(Sgd.) CECILE G. CARANDANG, ED.D, CESO V
Schools Division Superintendent

APPENDIX B

Questionnaire for ALS Computer Teachers In Caloocan City

Dear Fellow Teachers:

Attached herewith is my questionnaire as my data gathering instrument for you to fill up in order to come up with the necessary data needed in my study entitled **"The Implementation of Computer-Assisted Instruction in Caloocan City**" in partial fulfillment of the requirements for the degree **Master of Arts in Education** at the Lyceum Northwestern University, Dagupan City.

Thank you very much and rest assured that your responses be kept confidential.

Very truly yours,

(Sgd.) Jenny P. Pablico
Researcher

Part I- Status of the Implementation of Computer-Assisted Instruction in Caloocan City
Direction: Kindly provide the data on the space provided for each item.

A. Number of Trained Teachers with Computer-Assisted Instruction

School	**Number of Trained Teachers with Computer-Assisted Instruction**
1. Grace Park Elementary School (Main) 2. Kasarinlan Elementary School 3. Kaunlaran Elementary School 4. Lerma Elementary School 5. Libis Talisay Elementary School 6. Maypajo Elementary School 7. Sampalukan Elementary School	

Part II - Status of the Implementation of Computer-Assisted Instruction

Direction: Kindly provide the necessary data on the blank provided for.

A. Number and Percentage of Teachers having Computer

School	**Number of Teachers Having Computer**	**Percentage of Teachers Having Computer**
1. Grace Park Elementary School (Main) 2. Kasarinlan Elementary School 3. Kaunlaran Elementary School 4. Lerma Elementary School 5. Libis Talisay Elementary School 6. Maypajo Elementary School 7. Sampalukan Elementary School		

Part III - Status of the Implementation of Computer-Assisted Instruction

Direction: Kindly provide the data needed on the blank provided for.

School	**Number of Learners Exposed to Computers**		
	Grade IV	**Grade V**	**Grade VI**
1. Grace Park Elementary School (Main) 2. Kasarinlan Elementary School 3. Kaunlaran Elementary School 4. Lerma Elementary School 5. Libis Talisay Elementary School 6. Maypajo Elementary School 7. Sampalukan Elementary School			