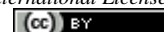


Computer-aided Instruction, Learning Styles and Academic Achievement: Interplay Towards Understanding of Philippine Literature for Grade 7 Students

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ABSTRACT

In the current era of education, the utilization of computer-based materials is widespread and has become more common as years pass by. The researcher aims to determine the effectiveness of teaching literature using computer-based materials as a strategy in teaching Philippine literature to Grade 7 students. This study seeks to compare the level of learning in terms of knowledge and practical skills acquisition and craftsmanship between learners using computer-based instructional materials and those using print-based instructional materials in teaching Philippine Literature. A quasi-experimental design is highly appropriate and considered to be effective for this research because it uses the pre-testing and post-testing of the respondents about the investigation at hand. Findings showed that the students always use visual (spatial) learning styles as they prefer to learn using pictures, images, and spatial understanding. In addition, the results revealed that the pupils' performance was improved with Computer-Aided Instruction (CAI). In line with this, the participants also showed preference to different methods such as the usage of DVD Video and social networking sites like Facebook for educational purposes. However, the research also uncovered setbacks to the ease of using computer-aided instructions. According to the participants, these difficulties include the availability of hardware and software, lack of funds, computer illiteracy, and attitudes of teachers.

ABSTRAK

Di era pendidikan saat ini, pemanfaatan materi berbasis komputer sudah meluas dan semakin umum seiring berjalannya waktu. Peneliti bertujuan untuk mengetahui efektivitas pengajaran sastra menggunakan materi berbasis komputer sebagai strategi dalam pengajaran sastra Filipina kepada siswa kelas 7. Penelitian ini berupaya untuk membandingkan tingkat pembelajaran dalam hal perolehan pengetahuan dan keterampilan praktis serta keahlian antara peserta didik yang menggunakan bahan ajar berbasis komputer dan mereka yang menggunakan bahan ajar berbasis cetak dalam pengajaran Sastra Filipina. Desain quasi-eksperimen sangat tepat dan dianggap efektif untuk penelitian ini karena menggunakan *pre-testing* dan *post-testing* responden mengenai penelitian yang sedang dilakukan. Temuan menunjukkan bahwa siswa selalu menggunakan gaya belajar visual (spasial) karena mereka lebih suka belajar menggunakan gambar dan pemahaman spasial. Selain itu, hasilnya menunjukkan bahwa kinerja siswa meningkat dengan *Computer-Aided Instruksi* (CAI). Sejalan dengan ini, para peserta juga menunjukkan preferensi terhadap metode yang berbeda seperti penggunaan Video DVD dan situs jejaring sosial seperti Facebook untuk tujuan pendidikan. Namun, penelitian ini juga menemukan kesulitan dalam penggunaan instruksi dengan bantuan komputer. Menurut peserta, kesulitan tersebut antara lain ketersediaan perangkat keras dan perangkat lunak, kurangnya dana, gagap teknologi, dan sikap guru.

1. Introduction

1.1. Research Background

The researcher found teaching utilizing Computer-Assisted Instruction most interesting because it makes learning easier for children. This is a fact she has proven while observing her son learning how to read with the aid of a computer. The child has learned the skill of reading all by himself. The computer software would generate a word, display it on the screen, associate a picture with the word and then pronounce it so that he could hear it and he would say it out loud. Eventually, he was able to make a certain amount of progress with his reading ability so that the results could be seen in this situation and thus the benefits of learning a language with the computer has been clearly established.

As an English Teacher for 25 years, the belief in the efficacy of Computer-Assisted Instruction has been strengthened. This is because of the learning styles of the students nowadays. All these prior observations and experiences has led the researcher to believe that the computer was a useful tool in learning not only in language skills but also concepts across all subjects particularly Philippine Literature.

Over the next few years, she was able to experiment with different instructional programs and this had deepened her understanding of computer-aided pedagogy. She had seen the value of the these digital and computer materials in instruction that provides the content as well as the computer hardware that makes it feasible. Furthermore, she also had seen the value it provides for the learner in the secondary level which prompted her to push through with this study. The use of computer technology has quickly evolved in education and so did computer-based learning. This dramatic change from traditional teaching has far-reaching implications for the future of education and it is in this context that the concept of this study has been drawn.

In this paper, the researcher aimed at determining the effectiveness Computer-Aided Instruction (CAI) in teaching literature using the quasi-experimental method with videos and other multimedia digital tools as a strategy in teaching Philippine literature to Grade 7 students. More specifically, this study has also explored the interplay of the learning styles of students as a factor which have significant effect on the academic achievement of Grade 7 students. This research project likewise has attempted to make use of nonequivalent control group design as research method and the Multiple Analysis of Covariance as statistical tool in analyzing the results. Moreover, the researcher investigated the relationship between the Learning Style and academic performance which are presumed to have direct connection in enhancing motivation in learning.

It will also discuss the challenges of teachers that teachers faced in the utilization and preparation of Computer-aided instructional materials; and in tackling

this aspect of the study, the researcher was able to craft innovative computer-aided instructional materials in Philippine Literature that can develop student's awareness and thus, enhance their academic achievement in studying Philippine Literature. It is hoped that this would contribute essentially to the growing body of knowledge in Computer-Aided Instruction in the country and the application of its best practices in every classroom and in every teacher's repertoire of professional practice. Its findings can inform Filipino school practice in tackling the challenge of adding significant value to the educational service that teachers provide for the learners particularly in the public schools.

1.2. Literature Review

Over the past three decades, educational researchers have investigated the effects of computer use on student achievement and attitudes. This area of research is expanding to include computer applications in support of the academic curriculum [1]. The basic terms such as computer-based education (CBE), computer-based instruction (CBI), and computer-assisted instruction (CAI) are commonly found in the literature. CBE and CBI often refer to the general use of computers in the classroom setting. Such use may involve many facets of instruction and can utilize a variety of computer technologies and applications (e.g., databases, drill and practice, Web quests).

There are researchers assert that with the utilization of mobile devices such as laptops and tablet computers, the learning process for the students become more fun and conducive due to the user-interactivity and appealing visuals present in these learning tools [2]. Of course, those same advances are available to teachers and the youngsters who populate their classrooms. These developments in technology are leading to enormous challenges for teachers regarding the role digital devices can and should play in the learning process.

Additionally, with the use of the internet, teachers are able to communicate with their students more easily, and allow them to distribute learning materials such as assignments, exercises, and tests to their pupils [2]. Likewise, through the use of the internet, instructors would have access to a vast number of resources such as pictures for illustrations, various texts for class readings and so forth. The use of a video lesson is ideal to support traditional classrooms. The pedagogy of a teacher's text extends into a highly visual, hands-on learning environment that is available any time. Video materials and methods for teaching oral medication administration generates higher satisfaction and greater cognitive gains for the multimedia group [3].

Many researchers have proclaimed the significance of identifying preferred teaching styles and preferred learning styles. Researches alluded to this significance: The research findings on learning styles offer substantial

promise to teachers, counselors, and the students themselves in terms of finding better ways for students to learn [4]. But while matching learning style with instructional mode apparently facilitates positive interpersonal relations, and while it would seem to point the way for increased learning, the empirical data that support this idea are rather scarce. Such a significant gap in the research must be filled if knowledge about learning styles is to become a significant force in improving college and university teaching [4].

However, identifying and defining the vast number of learning styles can become an enormous task. The myriad of labels and categories used in identifying the different areas of style can be overwhelming for educators [5]. Learning style is a complex construct involving the interaction of numerous elements; thus, at the outset, the experimenter is faced with the difficult task of having to decide which dimensions of learning style to elucidate and which interactions might be meaningful, in a practical sense, in understanding their contribution to achievement [6].

There are many definitions of learning styles in the literature. For example, Cornett defined learning style as “a consistent pattern of behavior but with a certain range of individual variability”. Learning style describes a student in terms of those educational conditions under which he is most likely to learn [7]. Learning style describes how a student learns, not what he has learned [7]. From a phenomenological viewpoint, learning style consists of distinctive and observable behaviors that provide clues about the mediation abilities of individuals. In operational terms, people through their characteristic sets of behavior ‘tell’ us how their minds relate to the world, and therefore, how they learn [8].

Learning style is the composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment [9]. They suggested that it is within these domains that instructors identify learning styles and try to match them with an appropriate teaching style. Learning styles are the characteristic ways that individuals collect, organize, and transform information into useful knowledge [10]. Learning style is consistent across a wide variety of tasks. It has a broad influence on how information is processed and problems are solved, and it remains stable over many years.

Teaching style was defined as a pervasive way of approaching the learners that might be consistent with several methods of teaching [11]. In addition, a researcher contended that the overall traits and qualities that a teacher displays in the classroom and that are consistent for various situations can be described as teaching style [12]. The instructors’ philosophical beliefs are portrayed in the classroom through their teaching style [13]. The behavior of the teacher probably influences the character of the learning climate more

than any other single factor [14]. Teaching style consists of an instructor’s personal behavior and the media used to transmit or receive data to or from the learner [15].

Consequently, the Department of Education had employed a project in which all public schools in the country be connected to the internet [16]. DepEd Secretary Armin Luistro maintains that “it’s not enough that we merely continue building classrooms and toilets. The real revolution in education which has long-term effects can only be done through information technology.” As of present, 95 percent of public high schools have computer labs, but only 57 percent have access to the internet, says the Department of Education (2012). For public elementary schools, however, only 4 percent are equipped with e-Classroom packages, the DepEd adds.

The students benefit from utilizing computers in their education by making school work easier; likewise, the instructors benefit from the usage of technology in teaching. Gone are the days when instructors need to write out the topics on the chalkboard, prepare a Manila paper to display a text or show flash cards for Math drills. Presenting topics to students is as easy as a click on the keyboard, as the text or illustration immediately unfolds onscreen in a slideshow presentation [17]. This not only makes preparing visual aids for class more efficient and less time-consuming, but it also helps keep the flow of discussion inside the classroom more interesting and more engaging to the students.

The modern classroom now requires the use of computers, the internet and mobile devices practically in every school activity. With this idea in mind, the Department of Education has planned to modernize the Philippine classrooms in line with its K to 12 programs. Today, education at all levels is gearing towards a computer-centric learning environment. Through the implementation of technology inside the classroom, teachers and students can yield positive results within the learning environment and true-to-life situations.

For some educators, the view is that technology should only be utilized as a tool to help facilitate student understanding and mastery of the current curriculum. For other educators, technology is as fundamental to learning as reading and writing and therefore must become a separate segment of the school curriculum. In this view, the teachers are requiring to integrate; innovate; and indigenize, not only his knowledge but together with the visual aids they are using to make an effective transfer of learning in their day-to-day teaching inside the classroom.

Computer-Assisted Instruction (CAI) is used when describing more specific applications such as drill-and-practice, tutorials, or simulation activities offered either as a stand-alone activity or supplemental activities to enhance teacher-directed instruction [18]. Computer-assisted instruction (CAI) and the technology for

learning on computers began taking roots in the late 1950s [19]. Although the use of computers is not new, CAI is still a popular and common terminology in today's educational institutions and schooling process. CAI provides an instructional interaction between the learner and the computer in a variety of contents with or without the assistance of the teacher [20]. In this process, CAI helps the learner(s) by presenting material and acting as a tutor. CAI uses the computer to facilitate and improve student learning. Students interact with computers at their own pace and the role of the teacher becomes a facilitator. CAI programs direct the learner's attention to different sections in a learning sequence without the direct assistance of a teacher [21].

With the advent of cheaper and more powerful personal computers in the 1980s, use of CAI increased dramatically. In 1980 only 5 percent of elementary schools and 20 percent of secondary schools in the United States had computers for assisting instruction. Three years later, both numbers had roughly quadrupled, and by the end of the decade nearly all schools in the United States, and in most industrialized countries, were equipped with teaching computers.

A recent development with far ranging implications for CAI is the vast expansion of the Internet, a consortium of interlinked computers. By connecting millions of computers worldwide, these networks enable students to access huge stores of information. This greatly enhances their research capabilities.

The rapid improvement in information technology and other technological advancements in society have had major effects on teacher preparation programs. The advancements in information technology will fundamentally change the nature of teacher preparation programs, because the majority of instructional environments contain interaction among students, teachers, and information given to students [22]. Furthermore, technological implications may change the nature of these interactions in many ways, including the ways the information can be obtained, manipulated, and demonstrated in a content-specific teaching and learning environment.

Different subject matters in the teacher education curriculum have also taken advantage of using information technology in their curriculum. Videodisc technology was developed at the Ohio State University PETE Program to teach physical education majors how to analyze sport specific skills [23], [24]. In addition, the TECH (Technology in Early Childhood Habitats) program at the University of Delaware organized computer courses for pre-service teachers to teach computer use for early childhood education in many ways [25]. Consequently, information technology, including CD-ROMs, interactive videodiscs, teleconferencing, electronic mail, and microcomputers with hypermedia/multimedia programs has been part of

teacher education programs in several ways. All of these can thus be tagged as e-learning.

E-learning includes all forms of electronically supported learning and teaching, including EdTech [26]. The information and communication systems, whether networked learning or not, serve as specific media to implement the learning process. The term will still most likely be utilized to reference out-of-classroom and in-classroom educational experiences via technology, even as advances continue in regard to devices and curriculum. Abbreviations like CBT (Computer-Based Training), IBT (Internet-Based Training) or WBT (Web-Based Training) have been used as synonyms to e-learning.

E-learning is the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, virtual education opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio.

It is commonly thought that new technologies can strongly help in education. In young ages especially, children can use the huge interactivity of new media, and develop their skills, knowledge, perception of the world, under their parents monitoring, of course. Many proponents of e-learning believe that everyone must be equipped with basic knowledge in technology, as well as use it as a medium to reach a particular goal.

It can be seen then that e-learning can describe a wide range of applications, and it is often by no means clear even in peer reviewed research publications which form of e-learning is being discussed. However, Bates and Poole argue that when instructors say they are using e-learning, this most often refers to the use of technology as classroom aids. Although over time, there has been a gradual increase in fully online learning.

Computer-based learning, sometimes abbreviated to CBL, refers to the use of computers as a key component of the educational environment. While this can refer to the use of computers in a classroom, the term more broadly refers to a structured environment in which computers are used for teaching purposes. Furthermore, there is research about the ever-increasing role that computers would play in higher education [27]. This evolution, to include computer-supported collaborative learning, in addition to data management, has been realized. The type of computers has changed over the years from cumbersome, slow devices taking up much space in the classroom, home, and office to laptops and handheld devices that are more portable in form and size and this minimization of technology devices will continue.

Computer-supported collaborative learning (CSCL) is one of the most promising innovations to improve teaching and learning with the help of modern information and communication technology. Most recent developments in CSCL have been called E-Learning 2.0, but the concept of collaborative or group learning whereby instructional methods are designed to encourage or require students to work together on learning tasks has existed much longer. It is widely agreed to distinguish collaborative learning from the traditional 'direct transfer' model in which the instructor is assumed to be the distributor of knowledge and skills, which is often given the neologism E-Learning 1.0, even though this direct transfer method most accurately reflects Computer-Based Learning systems (CBL).

Blogs, Wikipedia, and Google Docs are commonly used CSCL mediums within the teaching community. The ability to share information in an environment that is becoming easier for the lay person has caused a major increase of use in the average classroom [28]. They also attest to the fact that one of the main reasons for its usage states that it is "a breeding ground for creative and engaging educational endeavors." Using Web 2.0 social tools in the classroom allows for students and teachers to work collaboratively, discuss ideas, and promote information.

Blogs, wikis, and social networking skills are found to be significantly useful in the classroom [29]. After initial instruction on using the tools, students also reported an increase in knowledge and comfort level for using Web 2.0 tools. The collaborative tools additionally prepare students with technology skills necessary in today's workforce.

Locus of Control remains an important consideration in successful engagement of E-learners. The continuing attention to aspects of motivation and success in regard to E-learning should be kept in context and concert with other educational efforts [27]. Information about motivational tendencies can help educators, psychologists, and technologists develop insights to help students perform better academically.

Along with the terms learning technology, instructional technology, the term Educational Technology is generally used to refer to the use of technology in learning in a much broader sense than the computer-based training or Computer assisted instruction of the 1980s. It is also broader than the terms Online Learning or Online Education which generally refer to purely web-based learning. In cases where mobile technologies are used, the term M-learning has become more common. E-learning, however, also has implications beyond just the technology and refers to the actual learning that takes place using these systems.

Research was conducted with middle-school Kuwaiti children to assess the effectiveness of student learning styles in predicting students' academic performance in

Mathematics. A group of middle school students who had received first quarter grades and enrolled in an after-school tutoring program were studied with half of the students in a traditional tutoring program and the other half in a Markova learning style-tutoring program. Results showed that the students in the experimental group (mean = 45.91), whose learning styles were accommodated for, performed better than the students in the control group who studied using the traditional method (mean = 43.80) of teaching. Gender, type of school attended, and area in which the students lived were all analyzed within the experimental group. The experimental group results show that the highest-grade improvement in Mathematics was found to be predominately male students attending private institutions, and living in the urban areas of Kuwait.

Students learn in a variety of ways, and their ability to attain this information also varies. A student's capacity to learn is impacted by the teacher's style of conveying information. Unfortunately, little attention has been given to how children think [30]. Often, it is assumed that students' minds operate in the same way as the teacher's does. So much of student failure in school comes directly out of the larger failure to stimulate all those areas in the children's brains, stimulation which could open up their minds in so many ways [30].

Student's academic performance is a matter of concern to educators, parents, and students themselves. The ways in which an individual characteristically acquires, retains, and retrieves information are collectively referred to as his or her learning style [31]. Unfortunately, the manner in which children acquire the information to perform well academically is too often ignored.

Considerable research has examined the relationship between students' learning styles and their academic performance [32]. These studies have consistently found that when learning styles were considered in the teaching process, academic performance increased. Accommodating the variations in learning styles could improve curricula and the teaching process [33]. Students whose learning styles are accommodated would be expected to achieve 75% of a standard deviation higher than students for whose learning style had not been accommodated [32]. Many researchers have reported that students often classified as poor achievers, learning disabled, at-risk youth, or dropouts were able to improve their academic performance when instruction was redesigned to respond to their particular learning style preferences [34].

Children suffer deeply when their natural way of thinking, of absorbing and processing information, of creating and expressing is criticized, mocked, or ignored [30]. However, learning efficiently empowers children to gain confidence since many believe they have learned a skill only after they can perform it easily. Markova acknowledges that many approaches to understanding

individual differences include something about the fact that most of us have one sense we are most comfortable using in the learning process. Understanding these patterns of processing information is crucial to finding the most effective ways to educate our children. Moreover, researcher has identified six patterns of personal thinking, which are different combinations of the perceptual kinesthetic (K), auditory (A), and visual (V) channels. He posits that information is first received by the conscious mind, sorted by the unconscious mind and finally integrated by the subconscious mind [30]. The six different combinations (KAV, KVA, AVK, AKV, VKA, and VAK) are referred to as personal thinking patterns and determine the most comfortable and effective way for each learner to learn.

A researcher conducted a Comparison of Computer-Assisted Instruction and the Traditional Method of Teaching Basic Statistics in a class of 38 sophomore college students in the basic statistics taught with the use of computer-assisted instruction and another class of 15 students with the use of the traditional method from the University of the East, Manila [35]. It has been found out in that study that the achievement posttest of the treatment group has higher estimated marginal means than the control group and it is reversed in the attitude posttest. Using Hotelling's Trace for the multivariate test, the achievement pretest, attitude pretest, and the two groups have a significant effect on the dependent variables, achievement posttest and attitude posttest.

Using covariates to control for the effects of additional variables that might affect performance the attitude pretest accounts for about 56% of the variability in the two groups while achievement pretest about 15%. Levene's test shows that the homogeneity of variances assumption between the two groups is met for achievement posttest but not for attitude posttest. The univariate effects for achievement posttest that are significant are achievement pretest, college entrance test overall score, and groups. The univariate effects that are significant for attitude posttest are attitude pretest and high school general weighted average.

A researcher viewed video as a potential window that can expose the minds and heart of many to modern practices and environmental concepts, far more than what the traditional classroom teaching can achieve [36]. He stated further those youths and children are so enthralled with home video films that they are described as video crazy. This interest, can be exploited in the formal school system for teaching / learning in vivid and entertaining manner.

Researcher stated that studies have shown that there is improvement in teaching – learning process through the use of video [37]. According to him, video can be used to provide real experiences in almost all field of learning. It can be made to repeat information and demonstration as many times as possible, thereby, learning is made easier, realistic and concrete for

learners. It allows for self-instruction. It provides a cheap and fast way of disseminating educational information and practical skills. Two researchers declared that video can help the teacher to work more closely with the learner and reduce the need for repeated explanation [38]. It has the capacity to motivate learners and difficult skills are better viewed especially with the slow motion. Lastly, the high quality of visual images makes videotape presentation a more realistic package and gives the learners who are experienced TV viewers, familiar ground to work with.

Researcher expressed that video lectures are feasible through the use of personal computer. They are not recording of classroom lectures but cover lecture material as screen displays of content files with audio narrative are added [39]. They can be produced before a course begins or developed as it progresses. Researcher found that video lectures make available instructor/quality lectures that students can view and study as much as needed to meet their individual learning needs [32]. They are detailed step-by-step explanation of materials used in classroom lectures and are presented at a delivery pace that is significantly slower than what can be accomplished in the limited time available in the classroom. They can be paused and repeated and thus can be studied by students at their own learning pace.

Additionally, video lectures are more focused learning experiences than the traditional study of a textbook. For video lecture to be effective, they must be accepted and used by students [40]. They must provide an enjoyable or at least satisfactory learning experience, be perceived by students as providing a time-efficient study resource and or be perceived as improving understanding and grade performance. Students who used the video were 73% of the respondents [41]. The high use rate suggests that students broadly accept and use video lectures as a form of computer- based instruction and as an enhancement of traditional classroom courses. Moreover, 31.5% viewed the video in advance of classroom lectures, 72.2% used it to do homework, 72.4% used it to prepare for examination, 63% agreed that video is good for tutoring help and 38.9% believed that it helped to raise their course grade. For video lectures to be most effectively used by students, they should appeal to their learning preferences [42].

Video lecture appeals are as follows:

- a) their content is 100% relevant to course performance requirements and it is presented at a more detailed pace than classroom lectures,
- b) videos can be replayed and enable students to repeat the instructor's explanation
- c) they can be viewed at a time, location and under environmental conditions of a student's choice

- d) their portability enables listening and study without the competing distractions that often accompany classroom lecture.

A researcher, who researched on the effectiveness of video as a media found that video group performed better than the group without instructional media. The video group did significantly better than the chart group [43]. He concluded that video was an effective medium for teaching / learning in schools. A researcher discovered that all his respondents were favorable to video tutorial [44]. 75% reported that the tutorials were enjoyable and interesting, 84.6% indicated that, it met their needs, 100% reported that they were straight forward and easy to understand.

A summary of 59 CAI research studies compiled by Cotton provides insight into the benefits and effects of CAI. A few of the research findings shared by Cotton include:

- a) The use of CAI as a supplement to conventional instruction produces higher achievement than the use of conventional instruction alone;
- b) students learn material faster with CAI than with conventional instruction alone;
- c) CAI is beneficial for younger students;
- d) CAI is more beneficial for lower-achieving students than higher- achieving students;
- e) students with disabilities achieve at higher levels with CAI than with conventional instruction alone;
- f) students' fondness for CAI activities centers around the immediate, objective, and positive feedback provided by these activities.

Multiple researchers further investigated the effects of CAI on reading instruction for students with learning disabilities [45]. Their research found:

- a) the CAI software used in research studies where students made significant gains involved software that was carefully designed to incorporate systematic instructional procedures found to be effective in reading instruction (i.e., explicit, strategic, and scaffold instruction, engaged time, success rate, and corrective feedback);
- b) research reinforces the need to apply systematic, elaborate corrections for students to learn efficiently and effectively; and
- c) the application of CAI as supplemental activities to teacher- directed instruction had significant outcomes favoring CAI over other interventions such as additional traditional teaching and workbooks.

Multiple researchers investigated specific features of computer technology related to targeted outcomes regarding children's acquisition of early reading skills

[46]. This research involved 46 at-risk kindergarten children. Software used in this study allowed concrete manipulation of letters and word components in activities and games involving the decomposition, re-composition and creation of words.

Findings identified key features of the software learning environment, which were relevant to building early reading skills. Such features involved the concrete manipulation of language entities through the act of touching, hearing, seeing, constructing, playing and replaying auditory constructs. The features also held substantial potential for assisting young children to acquire needed skills in reading.

A researcher showed that much research has been focused on the effectiveness of CAI, which is demonstrated through improved test scores [47]. Effectiveness has also been measured through "heightened affective responses, or better attitudes, reduced learning time, higher course completion rates, an increased retention duration, and finally cost" [48]. Generally, the effectiveness of CAI has been determined by comparing CAI with traditional classroom instruction [49].

A researcher pointed out that while technology does not promote understanding in and of itself [50]. It is a tool that can help students view learning as a constructive process and use simulations to draw students' attention. It provides a supportive environment that is rich in resources, aids exploration, creates an atmosphere in which ideas can be expressed freely, and provides encouragement when students make an effort to understand [51].

Computer and learning are fast becoming inseparable associates in the field of modern education. More than just another teaching tool, computers are being used as teaching and learning partners. Most researchers concluded that the use of CAI leads to more positive student attitudes than the use of conventional instruction. This general finding has emerged from studies of the effects of CAI on student attitudes [18].

Currently many countries deemed to have knowledge of computers is essential as well as literacy. The revolution in Information and Communication Technology (ICT) has provided many unique benefits to teaching and learning. It allows students to learn depending on their own ability and the speed they need, such as smart student learn faster and takes less time while average students learn more slowly and take more time. Modern technology, most precisely, the computer has become the chief determinant of the progress of nations, communication and progress of individual.

Although a wide variety of microcomputers and CAI software are available in the market, the ideas driving the instructional tasks in CAI programs are not new. Some of the features of CAI have originated from the learning theories of education and psychology [52],

[53]. The effect of these psychologist research on stimulus-response relationship, negative and positive reinforcement, and the role of immediate feedback in a teaching and learning environment have promoted the development of programmed instruction [54].

In a classroom utilizing CAI, students often work independently or in pairs at computers around the room. Software effectively guides students through a series of interrelated activities and instruction, addressing a variety of learning styles. Working in pairs could also facilitate learning. Researchers found in their study that students in cooperative environments developed more positive attitudes towards English Literature than students in traditional environments [55].

Researchers advocated cooperative learning not only for the positive effect it has on student performance but also for the positive effect it has on motivation, classroom socialization, the student's confidence in learning, and attitude toward the subject being learned [56], [57]. Information technology has played many roles in helping teacher education programs. There are several publications and research studies that describe courses and programs about pre-service teachers and technology with a growing body of literature in both qualitative and quantitative research [58].

1.3. Research Objective

This study aims to determine the effectiveness of teaching literature using computer-based materials as a strategy in teaching Philippine literature to Grade 7 students. Specifically, this study seeks to answer the following questions:

- a) How do the teacher-respondents utilize computer in teaching Philippine Literature?
- b) What are the dominant learning styles of the Grade 7 Philippine Literature students based on the seven (7) domains of the Learning Style Inventory?
- c) What is the academic achievement of the Grade 7 Philippine Literature students when taught with Computer-Aided Instruction (CAI) and no Computer-Aided Instruction (CAI)?
- d) Is there a significant difference in the academic achievement of Grade 7 Philippine Literature students when grouped according to with Computer-Aided Instruction (CAI) and no Computer-Aided Instruction (CAI)?
- e) Is there a significant relationship between the Learning Style and academic performance?
- f) What are the challenges of teachers in the utilization and preparation of computer-aided instructional materials?
- g) What innovative Computer-aided instructional materials in Philippine Literature may be develop to enhance students' academic achievement?

2. Research Method

The study used the quasi-experimental, nonequivalent control group design as research method. The statistical tool was the Multiple Analysis of Covariance. The researcher made use of the video materials from different sources and researcher-made as well to serve as the teaching medium for the experimental group. The first part of creating a quasi-experimental design is to identify the variables involved in the study. The quasi-independent variable will be the x-variable which is the variable to be manipulated in order to affect the dependent variable. The predicted outcome is the independent variable known as the y-variable.

In a time, series analysis, the dependent variable is observed over time for any changes that may occur. Once the variables have been identified and defined, a procedure should then be implemented. After that, the group differences shall be examined which would be the result of the study.

This research method was considered to be effective because it uses the pre- and post-testing of the respondents in relation to the investigation at hand. As has been previously cited, the procedure in this method includes different phases. These phases are development, implementation, and evaluation.

In the first phase, the researcher has crafted the instrument to be use in gathering data such as the test for students to determine their academic achievement. In order to ascertain if there has been progress in learning, the same assessment was given to the students twice. The initial assessment was given before the computer-assisted lessons Philippine Literature began and the second assessment was given after five lessons were completed. The grade difference between the two tests shows the progress. The Learning Style Inventory and Computer-aided instructional materials to be employed by the teachers.

During the implementation process, the actual experimentation process where the tests were done before any data was collected. The various instruments were administered by the researcher in conjunction with the statement of the problems at hand utilizing the method that was agreed upon and the processes involved in gathering data. The researcher, with the permission of proper authorities in the Department of Education has conducted the pre-testing of students in both controlled and uncontrolled group. This also includes the post-test which results have been recorded thereafter. These data were included in an explanation for the actual experimentation of the data.

The Learning Styles Inventory was also administered to identify the diversity of learners in the classroom having various styles of learning concepts. Learning styles of the students is said to be one of the contributing factors for effective learning development and can be the basis for the selection of developmentally-appropriate

instruction and assessment for the students [59]. Afterwards, the experimental teaching of the controlled group by the researcher using computer-aided instruction with video materials as resources, while for the other group, the traditional teaching of Philippine Literature shall be employed. The comparison of the two in terms of performance as a measure of effectiveness shall be observed, monitored and established through quantitative and qualitative data.

For the evaluation procedure, the researcher has collated all data gathered from the three (3) procedures that have been done. The interpretation of results has followed utilizing statistical procedures such as the T-test and Pearson-R. A t-test is an analysis of two populations' means through the use of statistical examination; a t-test with two samples is commonly used with small sample sizes, testing the difference between the samples when the variances of two normal distributions are not known. A t-test looks at the t-statistic, the t- distribution and degrees of freedom to determine the probability of difference between populations; the test statistic in the test is known as the t-statistic. On the other hand, A Pearson R or Pearson's Correlation Coefficient is a technique for investigating the relationship between two quantitative, continuous variables. Pearson's correlation coefficient (r) is a measure of the strength of the association between the two variables.

The main variables involved in this study involve are the learning styles, academic achievement of students in Philippine Literature against the dependent variable which is the utilization of computer-aided instructional materials as techniques in teaching Philippine Literature among the Grade 7 students. Generally, there are three ways to assign participants to quasi-experimental conditions: a between-subjects design (sometimes called an independent-group design), a within- subjects design (also called a repeated-measures design), and a mixed design [60].

In this study, it utilized the most commonly used nonequivalent groups design or NEGD. In its simplest form, NEGD requires a pretest and posttest for a treated and comparison group. The researcher did not control the assignment to groups but picked two comparable classrooms Grade 7 from each school in the district as respondents in this study.

Upon approval, the researcher downloaded a standardized Learning Styles Inventory which is readily available from the Google Scholar. This inventory does not require permission from the author. The assessment tools such as pre-test and post-test was submitted to the adviser for review and comments. The first test was conducted to the two experimental groups-the controlled and uncontrolled group and the data was retrieved, tallied, and interpreted through the Statistical Package for Social Sciences or SPSS. The post-test was administered to the two experimental groups-the

controlled and uncontrolled group and the data was retrieved, tallied, and interpreted.

The study employed pretest-post test for control and uncontrolled group in quasi-experimental design. The researcher has formulated a pre-test and post-test to be given to the student- respondents in two parts. The first part consists of the questions pertaining to the profile of the respondents. The second part consists of questions pertaining to the study itself. It is subdivided into a pre-test and posttest for control and uncontrolled group.

Standardized Learning Style Inventory was used to determine the learning styles of the students and correlate the data to the results of their academic achievement. This would also identify the profiles of the students that would help teachers select the suitable strategy, assessment and instructional materials that are more preferred for better understanding of concepts in Philippine Literature and in other subjects [59]. For the computer-aided instruction employed for the controlled group, the researcher has prepared lesson plans as exemplars for the said strategy. This will also become part of the outputs that this study has generated for the localization of instructional materials.

3. Result and Discussion

3.1. Utilization of computer in teaching Philippine Literature

Computer-based instruction is no doubt a viable tool towards effective learning and teaching. It helps to boost assimilation through good learning techniques and creation of variety of sensory. The following are strategies that can be utilized in teaching Philippine Literature with computers:

- a) DVD Video. In Philippine literature, instead of just reading about battles from World War II, have students recreate them on film. The students could then add a director's commentary over the video, highlighting the different parts of the battle. The teacher could keep the DVD and show it the following year. Maybe students could film a new battle each year. The researcher may be able to help students learn more by doing and seeing things than by reading from a book.
- b) Facebook. Facebook is a wildly popular online social networking. The researcher will ask the students through Facebook to create profiles about important people in the literature. Historical people are kind of boring when you just read about them in a textbook; students do better when they create something themselves. This is really an enjoying activity. The researcher made a page for Luahalti Bautista and Lope K. Santos. The researcher put in the page one of their stories and poems. These were two prominent writers in the Philippine literature. The researcher explained to the students how to create a Facebook page and how to add pictures,

songs, and videos about the Philippine literature. The researcher also shows them how to add a creative background page.

- c) Skype. The researcher thought of a good idea to use Skype for learning about other literature of other place in the country, like for example Ilocos. If I want to teach my students to learn the literature of other place in the country about a country, I ask the people who live there about their songs, poems, dances, etc. It was proven that the information they provide was more real and true than what the students find on the Internet. Skype is a way to communicate with people all around the country.

The researcher needed was a computer, a special camera that the researcher can connect to the computer, a speaker, an address on Skype, and the other person's address. With the use of the Skype the students can see people and hear them, and if students wanted to use this to learn, the students could interview the other person.

3.2. Dominant learning styles of the Grade 7 Philippine Literature students

Table 1 illustrates the dominant learning styles of the Grade 7 Philippine Literature students based on the seven (7) domains of the Learning Style Inventory.

Table 1. Dominant learning styles of the Grade 7 Philippine Literature students

| Learning Style | Mean | Verbal Interpretation | Rank |
|--|------|-----------------------|------|
| Aural (auditory-musical): I prefer using sound and music | 3.56 | Always | 2 |
| Visual (spatial): I prefer using pictures, images, and spatial understanding | 3.61 | Always | 1 |
| Verbal (linguistic): I prefer using words, both in speech and writing | 3.52 | Always | 3 |
| Physical (kinesthetic): I prefer using my body, hands and sense of touch | 3.22 | Often | 4 |
| Logical (mathematical): I prefer using logic, reasoning and systems | 2.98 | Often | 6 |
| Social (interpersonal): I prefer to learn in groups or with other people | 3.02 | Often | 5 |
| Solitary (intrapersonal): I prefer to work alone and use self-study | 2.87 | Often | 7 |
| Overall Mean | | Often | |

Data showed that the students always use visual (spatial) learning styles as they prefer to learn using pictures, images, and spatial understanding based on the mean score of 3.61, followed immediately that they always used aural (auditory-musical) as the students prefer using sound and music as reflected by the mean score of 3.56, while the always used verbal (linguistic) since the students prefer using words, both in speech and writing as reflected by the mean score of 3.52.

The student's lowest assessment was that they often used social (interpersonal) learning style as the students prefer to learn in groups or with other people as indicated from the mean score of 3.02, and they often used solitary (intrapersonal) learning style since the students prefer to work alone and use self-study as reflected from the mean score of 2.87. The students who are in the logical (mathematical) are the students who prefer using logic, reasoning and systems, while social (interpersonal) prefer to learn in groups or with other people, and solitary (intrapersonal) prefer to work alone and use self-study.

Students learn in a variety of ways, and their ability to attain this information also varies. A student's capacity to learn is impacted by the teacher's style of conveying information. Unfortunately, little attention has been given to how children think [30]. Often, it is assumed that students' minds operate in the same way as the teacher's does. So much of student failure in school comes directly out of the larger failure to stimulate all those areas in the children's brains, stimulation which could open up their minds in so many ways [30].

Student's academic performance is a matter of concern to educators, parents, and students themselves. The ways in which an individual characteristically acquires,

retains, and retrieves information are collectively referred to as his or her learning style [31]. Unfortunately, the manner in which children acquire the information to perform well academically is too often ignored.

Considerable research has examined the relationship between students' learning styles and their academic performance [32]. These studies have consistently found that when learning styles were considered in the teaching process, academic performance increased. Schroeder states that accommodating the variations in learning styles could improve curricula and the teaching process.

3.3. Academic Achievement of the Grade 7 Philippine Literature students

The following Table 2 illustrate the academic achievement of the Grade 7 Philippine Literature students.

Table 2. Academic Achievement of the Grade 7 Philippine Literature students with Computer-Aided Instruction (CAI)

| Performance | Pretest | | Posttest | |
|---------------------------|---------|-------|----------|-------|
| | F | % | F | % |
| 93-100 (Excellent) | 30 | 10 | 15 | 5 |
| 87-92 (Very Satisfactory) | 21 | 7 | 69 | 23 |
| 81-86 (Satisfactory) | 144 | 48 | 135 | 45 |
| 75-80 (Fair) | 90 | 30 | 60 | 20 |
| 70-74 (Poor) | 15 | 5 | 21 | 7 |
| Total | 300 | 100 | 300 | 100 |
| Mean Grade | | 81.25 | | 87.56 |

Table 2 displays the academic achievement of the Grade 7 Philippine Literature students with Computer-Aided Instruction (CAI). Findings showed that in the results in the pretest, there are 144 or 48 percent of the students who were taught with computer- aided instruction (CAI)

earned a fair grade of 81-86 followed immediately by 90 or 30 percent of the students were rated fair having scores ranging from 75-80 while 21 or 7 percent are rated very satisfactory with scores ranging from 87-92.

Of the 300 students, 30 or 10 percent incurred an excellent grade of 93-100 while 15 or 5 percent earned a poor grade of 70-74. As a whole, the students scored a satisfactory grade in the pretest having a mean grade of 81.23. On the other hand, it was found out that 135 or 45 percent of the students who were taught with computer-aided instruction (CAI) earned a fair grade ranging from a satisfactory grade that is 81-86, followed immediately 69 or 23 percent were rated fair with grades ranging from 87-92, while 60 or 20 percent incurred a fair grade ranging from 75-80. Of the 300 students, 21 or 7 percent, and 15 or 5 percent earned a poor grade of 70 – 74, and excellent grade of 93 - 100, respectively. As a whole, the students scored a satisfactory grade of 87.56.

Data revealed that performance of the students from the pretest who were taught with Computer-Aided Instruction (CAI) with grades 81.25. As for posttest, students got 87.56. In an interview with the respondents, they said that they appreciated the lecture very much with the use of Computer- Aided Instruction (CAI) as it enhances learning. Table 3 displays the academic achievement of the Grade 7 Philippine Literature students with no Computer-Aided Instruction (CAI).

Table 3 Academic Achievement of the Grade 7 Philippine Literature students with no Computer-Aided Instruction (CAI)

| Performance | Pretest | | Posttest | |
|---------------------------|---------|-----|----------|-----|
| | F | % | F | % |
| 93-100 (Excellent) | 9 | 3 | 15 | 5 |
| 87-92 (Very Satisfactory) | 21 | 7 | 24 | 8 |
| 81-86 (Satisfactory) | 54 | 18 | 81 | 27 |
| 75-80 (Fair) | 192 | 64 | 165 | 55 |
| 70-74 (Poor) | 24 | 8 | 15 | 5 |
| Total | 300 | 100 | 300 | 100 |
| Mean Grade | 79.78 | | 80.13 | |

Data showed that there are 192 or 64 percent of the students who were taught with no computer-aided instruction (CAI) scored fair in the pretest with grades ranging from 75 - 80 followed immediately by 54 or 18 percent of the students who are rated satisfactory with grades ranging from 81-86 while 24 or 8 percent got poor rating with grades ranging from 70-74. Of the 300 students, 21 or 7 percent incurred a very satisfactory grade ranging from 87-92 while 9 or 3 percent earned an excellent grade of 93-100. As a whole, the students who were taught with no computer-aided instruction (CAI) were rated satisfactory in the pretest with a mean grade of 79.78.

On the other hand, there are 165 or 55 percent of the students who were taught with no computer-aided instruction (CAI) scored a fair grade in the posttest ranging from 75 - 80 followed immediately by 81 or 27 percent who were rated satisfactory with grades ranging from 81 – 86 while 24 or 8 percent got a very satisfactory grade of 81 - 86. Of the 35 students, 15 or 5 percent of

the students incurred both an excellent grade of 93-100 and poor grade of 70-74 in the posttest. As a whole, the students were rated satisfactory with a mean grade of 80.55. Data implied that they have the same level of performance as shown in the result of the pre-test as seen from the over-all mean score of 79.78 in and 80.13 in the posttest.

3.4. Significant difference in the academic achievement of Grade 7 Philippine Literature students

The following Table 4 illustrate the significant difference in the academic achievement of Grade 7 Philippine Literature students with Computer-Aided Instruction (CAI).

Table 4 indicates the significant difference in the academic achievement of Grade 7 Philippine Literature students with Computer-Aided Instruction (CAI)

| Group | WM | z - value | | Decision | Remarks |
|----------|-------|-----------|------|----------|-----------------|
| | | C | T | | |
| Pretest | 81.25 | 2.71 | 1.96 | Accept | Not Significant |
| Posttest | 87.53 | | | | |

Where WM is weighted mean. C is computed and T is tabular. Since the computed z-value of 2.71 is greater than the tabular z-value of 1.96 using 0.05 level of significance, the hypothesis was rejected, and it is concluded that there is a significant difference in the academic achievement in Philippine Literature between the pretest and posttest results. Findings revealed that the pupils' performance was improved with Computer-Aided Instruction (CAI).

Table 5 describes the significant difference in the academic achievement of Grade 7 Philippine Literature students.

Table 5 Significant difference in the academic achievement of Grade 7 Philippine Literature Students with Computer-Aided Instruction (CAI)

| Group | WM | z - value | | Decision | Remarks |
|----------|-------|-----------|------|----------|-----------------|
| | | C | T | | |
| Pretest | 79.78 | 1.17 | 1.96 | Accept | Not Significant |
| Posttest | 80.13 | | | | |

3.5. Significant relationship between the Learning Style and academic performance

Table 6 displays the significant relationship between the learning style and academic performance.

Table 6. Significant relationship between the Learning Style and academic performance.

| Var | P | C | t-value | | D | Remarks |
|-----|------|-----|---------|-------|--------|-------------|
| | | | C | T | | |
| LS | 0.81 | HCr | 2.14 | 1.645 | Reject | Significant |
| AP | | | | | | |

Where P is Pearson's r and D is decision. Cr is correlation and HCr is high correlation. C is computed and T is tabular. LS is learning style and AP is academic performance.

Data revealed that there is a high correlation between the students' learning style and academic performance based

on Pearson's r of 0.81. Findings showed that students' academic performance is affected by their learning style. Furthermore, the hypothesis was rejected and concludes that there is a significant relationship between the students' learning style and academic performance since the computed t -value of 2.14 is greater than the tabular t -value of 1.645 using 0.05 level of significance.

Students learn in a variety of ways, and their ability to attain this information also varies [30]. Student's academic performance is a matter of concern to educators, parents, and students themselves. The ways in which an individual characteristically acquires, retains, and retrieves information are collectively referred to as his or her learning style [31]. The findings also jived with the findings of a researcher, who has consistently found that when learning styles were considered in the teaching process, students' academic performance increased [32].

A researcher suggested that students whose learning styles are accommodated would be expected to achieve 75% of a standard deviation higher than students for whose learning style had not been accommodated [32]. Many researchers have reported that students often classified as poor achievers, learning disabled, at-risk youth, or dropouts were able to improve their academic performance when instruction was redesigned to respond to their particular learning style preferences [34].

3.6. Challenges of teachers in the utilization and preparation of computer-aided instructional materials

There is no doubt computer-aided instruction is a viable tool towards effective learning and teaching in Philippine literature. It helps to boost learning and teaching process through good learning techniques and creation of variety of sensory. However, in spite of the many advantages on the use of computer-aided instruction, it presents a lot of challenges such as user incompetence, poor funding, poor maintenance, etc. Also in the long run, this may affect the students' assimilation rate and consequently lead to average or poor performance in examinations.

a) Availability of Hardware and Software. One of the most serious barriers influencing the implementation of computer technology is computer hardware. In an interview with the teachers, they said that the school has a limited number of computers and printers. Computer technology can be utilized by teachers in their educational procedure. This may appear when they see the capability of on-line classes and the chance of making net-based instructional subjects. So, hardware, software and web structures are necessary for integrating computer technology in education [61].

b) Lack of Funds. A researcher stated that lack of funds is one of the main causes that prevent teachers from using computer in their instruction [62]. The school lacks financial support to buy computer units for classroom use. It was found out that there is no budget allotted for the purchase of computers. He indicated a relationship between access to computers and the application of computers. Teachers who had computers in their classes used them in teaching than those who lacked; 50% of teachers who had computers in their schools applied them to inquiry and activities relevant to the provision of their lessons.

c) Lack of Computer Knowledge. Almost all teachers like to use computer technology but a lot of them either do not use it frequently or do not know how to appropriately utilize it. Teachers who do not use frequently computers should develop and practice the necessary skills of computers and those who do not know how to apply them stopped completely the basic tasks that are necessary for the effective use of computer. Lack of computer knowledge is a barrier for teachers to use computers in their classrooms. Many teachers need two or three years of experience to become significant users of computers in education. If teachers want to be skilled in applying technology in their classes, they should have at least five years of experience in using it [63]. Knowledge of teachers is an important factor for their success in the educational processes [63]. The relation between using computer in instruction and some other variables was examined [64]. It was indicated that the faculty's belief in their computer literacy was the greatest predictor of their usage of computers in their classes. It was also concluded that teachers should develop their knowledge based on the aims of education they want to pursue with the aid of computer technology. Teachers who do not have adequate knowledge and skill about computer technology show negative attitudes about its use [65].

d) Lack of Computer Experience. There is a connection between teachers' computer experience and their computer attitudes [66]. If teachers have more experience with computers, they will show positive attitudes towards them. A researcher declared that many teachers who had negative attitudes about the use of ICT in instruction did not have enough knowledge to make good decisions [67].

e) Researchers found that competence affected teachers' use of ICT in instruction. It was also indicated that teachers who have high experience with computers have high confidence to use them efficiently. A study was performed about the relationship between teachers' attitude and acceptance of computers. The results obtained from

this study showed that though many teachers say computer technology is a significant part of students' education, their lack of knowledge and experience results in a lack of confidence to include it in their lessons [65]. The teachers with more years of teaching experience are less inclined to use technology in their instruction. This finding may be due to the lower levels of skills related to technology and the lack of enough training for the use of technology in instruction.

- f) **Inadequate Computer Technology Support.** One of the significant factors that impact the utilization of computer is the inadequate computer technology support in hardware/software. It was indicated that some factors stopped teachers to integrate computer technology. They are technical support, the lack of practical training, and lack of planning for computer technology integration. Based on the outcomes obtained from this study, it was proposed that in order to perceive how computer is effectively applied by teachers, it is essential to investigate the teachers' beliefs and attitudes and the other external factors such as computer support that may affect their computer uses [68]. Teachers who are using computer technologies in their classrooms need sufficient support from computer experts and should learn different software programs. Workshops and electronic message boards are the means that can motivate and support teachers who are using computer technologies [69]. Teachers' teaching methods are personal and can be impacted by intrinsic and extrinsic factors [70].
- g) **Teachers' Attitudes.** Integrating computer in the classes is so complicated that requires a change in the attitudes of teachers. This change is obtained in the long run. A study was conducted by researchers about the factors which restrict the usage of ICT by teachers [71]. The results indicated that some factors like student-centered teaching, positive attitude towards ICT, and computer experience effect on the application of ICT by teachers. The other outcome of this study was that attitude towards computer had more effect on teachers in ICT use by teachers. Researcher expressed that teachers' attitude is one of the major predictors of the use of new technologies in instructional environments [72]. Positive attitudes about computers influence teachers' acceptance of the usefulness of computer technologies and affects whether teachers integrate these resources into their classroom [49]. Researcher represented those positive attitudes are developed in teachers who use computers more and promote further use of the computer in their daily teaching tasks and do activities that need computer technology [73]. Researchers emphasized that teachers' attitudes about technology affect their acceptance of the

usefulness of technology and its integration into instruction [74].

- h) **Lack of Professional Development in Computer Technology Integration.** One of the barriers that stops teachers learn how to use computer technology is insufficient teacher training [75]. It was exhibited that because of the lack of information technology experts, 46.3% of the 378 teachers stated that they did not have any professional development in computer technology integration. The type of training that teachers receive is also very important. In order to have a change in teachers' teaching methods, professional development must be content- focused and collaborative and this will certainly lead to students' learning [76]. Teachers will be able to gain new knowledge from the professional development and integrate it with their teaching methods if enough attention is paid to particular content areas or specific teaching approaches. Teacher professional development should not only pay attention to the particular programs and subject areas and teaching methods but also to the computer technology applications [77].

3.7. Innovative Computer-aided instructional materials in Philippine Literature developed

Computer-aided instruction is usable in language classroom because both teachers and learners can access to the target language in different fields. It assists teachers guide their students' learning and connect curriculum to the real-world activities. Researcher said that computer technology helps students collect information, investigate a topic, and be more productive [78].

It influences students' motivation to learn and increases their interest. A connection can be made between new information and what learners already know within and outside of the course syllabus through computer technology. Learners can find new information through computer technology that cannot be found in traditional textbooks.

The learning environment in a classroom can be changed by the computer technology. It is an important instrument for learning in the classroom and helps learners to succeed. Students can develop their language creativity through the help of computer technology [79].

According to a researcher, computer technology changes the teachers' role [78]. It takes them from the role of lecturers to the facilitators of learning and helps students become more independent. Technology is a tool that helps teachers to meet their instructional goals. It is considered as key ingredients that can bring about basic educational challenges [80]. Technology provides useful materials to both teachers and students and helps them interact with each other [81].

Technology provides numerous possibilities to increase educational experiences and expand academic opportunities [82]. Technology has a high potential to facilitate basic changes in teaching and learning [83]. The use of technology increases cooperative learning, integration of curriculum and teacher communication. While computer technology has a lot of advantages, there are some obstacles that prevent teachers to use it in their classrooms [84].

4. Conclusion

Utilization of computer in teaching Philippine Literature can be done in different ways including the use of DVD Video, Facebook, and Skype. The dominant learning styles of the Grade 7 Philippine Literature students were visual (spatial), aural (auditory- musical), and verbal (linguistic). The academic achievement of the Grade 7 Philippine Literature students with Computer-Aided Instruction (CAI) increased from fair in the pretest and satisfactory in the posttest, while with no Computer-Aided Instruction (CAI) the student's achievement is both fair in the pretests and in the posttest. Significant difference existed in the academic achievement of Grade 7 Philippine Literature students between the pretests and posttest with Computer-Aided Instruction (CAI), but no significant difference existed with no Computer-Aided Instruction (CAI). There is a significant relationship between the students' learning style and academic performance. The challenges of teachers in the utilization and preparation of computer-aided instructional materials include availability of hardware and software, lack of funds, lack of computer knowledge, lack of Computer Experience, inadequate computer technology support, teachers' attitudes, and lack of professional development in computer technology integration. There are a number of innovative Computer-aided instructional materials in Philippine Literature that were developed by the researcher.

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