



# THE USE OF TECHNOLOGY EQUIPMENTS IN THE TEACHING OF KINDERGARTEN LEARNERS IN AWAI ELEMENTARY SCHOOL SAN JACINTO

By  
EVELYN S. RONQUILLO

## CHAPTER 1 THE PROBLEM

### Rationale

It is clear that a high quality education is a common value shared in the United States and around the world. This is seen in households and in law. President Obama recently put forth a proposal for universal preschool. Access to a good education is just as important for grade school kids as it is for the students seeking a college degree, and it would be hard to find someone who does not agree that everyone has a right to get that education.

But while the individuals have such reverence for education, schools struggle. Test scores drop, teachers are laid off, programs are cut, and the quality of education varies greatly from school to school. So what can be done to save schools that are falling behind the public's standards – or dreams – of quality learning? It seems that the current obsession with technology and electronics may have the benefits in education struggling classes need to get back on track (Hendricks, 2013). Since, a child's ingress into kindergarten marks a significant stage in his/her life that needs emphasis. Kindergarten is the first formal institution that introduces a child to a world beyond the home. Kindergarten introduces children to a society and teaches them how to properly interact with the world around them.

In the Philippines, Republic Act No.10157, otherwise known as the Act Institutionalizing the Kindergarten Education Into the Basic Education System And Appropriating Funds Thereof, declared that, in consonance with the Millennium Development Goals on achieving Education for All (EFA) by the year 2015, it is the policy of the State to provide equal opportunities for all children to avail of accessible, mandatory, and compulsory kindergarten education that can effectively promote physical, social, intellectual, emotional, and skills stimulation and values formation to sufficiently prepare them for formal elementary schooling (Section 2). This Act effectively makes kindergarten as an integral part of the basic education system of the country.

It is a well-established fact that although children's first significant relationships are typically forms with parents, alternative relationships formed with teachers and other primary caregivers are also critical to child and

adolescent development. It is supported by a national survey of adolescents (Resnick et al., 1997) which revealed that the single most common factor associated with positive youth outcomes was a supportive relationship with an adult, and teachers were among the adults most frequently mentioned as the source of this support.

Therefore, as children enter school, teachers play an important role in shaping children's experiences outside of the home environment and early on can assist in supporting young children's adaptation to new challenges and demands during the transition into a classroom environment. Aside from their formal role of teaching academic skills, teachers are often responsible for regulating activity level, communication, and contact with peers (Howes and Hamilton, 1993). Teachers also provide behavioral support and teach coping skills (Doll, 1996). In contrast to parent and child relationships, relationships between teachers and children are more likely to be time-limited in nature. Yet, teacher and child relationships are deemed important by children of all ages (Pianta, Hamre, and Stuhlman, 2003) and are associated with later academic and social functioning (Hamre and Pianta, 2001).

Choosing and developing instructional materials for kindergarten learners are a demanding and sophisticated process due to their characteristics. As one of the significant characteristics of kindergarten learners is illiteracy, using special course books designed for them is vital. Although most of the publishing companies have course books for different age kindergarten learners, teachers need to consider weekly course hours, age, and objectives while choosing the course book to be used. McKay (2006) and Rixon (1999) define young learners as the learners between the ages of five and twelve whereas kindergarten learners are between the ages of three to six.

As kindergarten learners have varying attention span and easily get bored (Cameron, 2005), teacher need to enrich the course with the help of using other instructional materials and techniques. Cartoons, realias, songs, flashcards, games are suitable means to foster young learner's imagination and fantasy (Pinter, 2006; Arikan & Ulas-Taraf, 2010; Yolageldili & Arikan, 2010). In addition, tongue twisters, riddles, and storytelling are effective activities to attract young learner's attentions and make learning process enjoyable as well. (Damar, 2009; Eksi, 2009). Furthermore, brightly colored visuals, toys and puppets are quite effecting for keeping them engaged in activities (Linse, 2005).

Considering that in the technology age, such information and communication technologies (ICT) as podcasts, digital storytelling, online games and software suitable for kindergarten can also be used as technological authentic materials by the help of their teachers (Arikan, 2010).

All of the activities and materials including such senses as hearing, seeing and touching address to learners visual/spatial, body/ kinesthetic and musical/rhythmic intelligences and thus yield to fostering a positive environment as well as prolonging their attention span (Eksi, 2009). These activities and materials also make language input comprehensible for learners. In addition to instructional materials and activities, learning environment of kindergarten learners should be distinctive and has inherent characteristics. Harmer (2007) states that young learner's classroom should be bright and colorful, with windows the children can see out of, and be spacious enough for different activities. According to Harmer (2007), since children are curious, love discovering things and using their imagination, they may well be involved in puzzle-like activities, making things, games, physical movement and songs. Hence, a good primary classroom harmonizes play and learning in a cheerful and supportive atmosphere.

Besides, kindergarten focuses on cognitive development, numeracy and sensory perception.

On cognitive development, the most obvious cognitive skills sharpened by sensory play are problem solving and decision making; simply present a child with a problem and various materials with which to find a solution, and one can almost see the connections their brains are making. A few examples include deciding how to build a boat that will float, how to turn whipped cream green, or how to make sand stick together. In addition, children can build math skills such as comparing size (big versus small), counting and one-to-one correspondence (matching numbers to objects), timing (does water or oil move faster?), matching (same sizes

and shapes), and sorting and classifying (buttons, beans or rice), and science skills such as cause and effect (what happens when I add water to sand?), gravity (water slides down a funnel, not up) and states of matter (ice melts). Without realizing it, children grow into amateur scientists by making predictions and observations, and even develop analysis skills.

On numeracy, it is the ability to reason and to apply simple numerical concepts (Brooks et. al, 2010). Basic numeracy skills consist of comprehending fundamental arithmetic like addition, subtraction, multiplication, and division. For example, if one can understand simple mathematical equations such as,  $2 + 2 = 4$ , then one would be considered possessing at least basic numeric knowledge. Substantial aspects of numeracy also include sense, operation sense, computation, measurement, geometry, probability and statistics. A numerically literate person can manage and respond to the mathematical demands of life (Statistics Canada, 2009).

On sensory perception, children (and adults) learn best and retain the most information when they engage their senses. Many of the favorite memories are associated with one or more of the senses: for instance, the smell of a summer night campfire or a song one memorized the lyrics to with a childhood friend. Now, when the nostrils and eardrums are stimulated with those familiar smells and sounds respectively, the brain triggers a flashback memory to those special times.

“Sensory experiences” provide open-ended opportunities where the process is more important than the product; how children use materials is much more important than what they make with them. Prompting the children to think creatively in order to solve problems or engage in make-believe helps them express their creativity and self-esteem (Steinberg,n.d.).

Yolageldili & Arikan (2010) state that teaching young learners require special efforts and includes challenges. Therefore, teachers should be patient while teaching in kindergarten classrooms, and always be pursuit of more suitable instructional materials for their students.

Everybody is talking about technology integration, but few practicing teachers profess to know exactly how to proceed. The fact is that real integration requires change. However, what seems to be lacking is a model that teachers can be use to guide them through the necessary changes they will need to make to be successful in integrating new technology into their classroom (Johnson & Liu, 2000).

Thus, the study was conducted.

## Theoretical Framework

Technology and Learning Theory and Constructivism were the theories that supported the study.

Technology and Learning Theory by Innovative Learning as cited by Culatta (2011) was the first basis of the study. The use of instructional technology provides some new possibilities of learning theories. It is important to address how various technologies can impact how to teach, learn, and think. Through applied and basic research, as well as theoretical and conceptual inquiry individuals are attempting to guide the design, development, implementation, and evaluation of a new generation of learning environments.

Effective use of educational technology is vital to solving many of our current educational challenges. This section of Innovative Learning provides resources to help teachers learn about educational technology tools that improve teaching and learning.

While effective learning should be the driving force behind technology integration, it is important to keep up with technology advances in order to recognize potential solutions. Tools are abundant, but we must be able to recognize how to leverage their capabilities (or affordances) in order to improve the learning experience.

Constructivism was another theory that supported the study.

Based on the core ideas of constructivist learning theory, constructivist pedagogy proposes that instruction must take students’ prior ideas, experiences, and knowledge into account while providing opportunities for students to construct new understanding.

Although constructivist instruction can take many forms based on the instructor's theoretical commitments, constructivist teaching at its core focuses on students' active role in their own learning as they build and organize their knowledge. Constructivist instructional frameworks, such as those discussed by Lebow (1993), often focus on the following attributes: personal relevance, the opportunity to generate new knowledge, personal autonomy, active engagement, collaboration, the opportunity to reflect on learning, and pluralism. In addition, Langer and Apple-bee (1987) discuss how the core goals of constructivist teaching often include promoting democratic learning environments and student-centered instruction. As a result, "teachers are apt to feel comfortable in this role only if they view uncertainty and conflict as natural and potentially growth producing for members of the learning community" (Prawat & Floden, 1994).

To create personal relevance, learners need to understand the benefits and importance of the curriculum for their own interests. Teachers can promote this relevance by incorporating real-life situations and experiences into their student's classroom learning. To give students an opportunity to be involved in creating knowledge, the learner should be involved not in activities in which the goal is to memorize facts but in problem-solving activities. For instructional design geared toward radical constructivism, students should be provided with personal autonomy in which individual work is part of the instructional framework. Also, students should be part of the process of designing the problem as well as dictating the process for working on that problem. Furthermore, to actively engage students, "teacher's role should be to challenge the learner's thinking- not to dictate or attempt to proceduralize that thinking" (Savery & Duffy, 2001). For instruction geared toward social constructivism, collaboration provides opportunities for students to interact and teach one another in small group work.

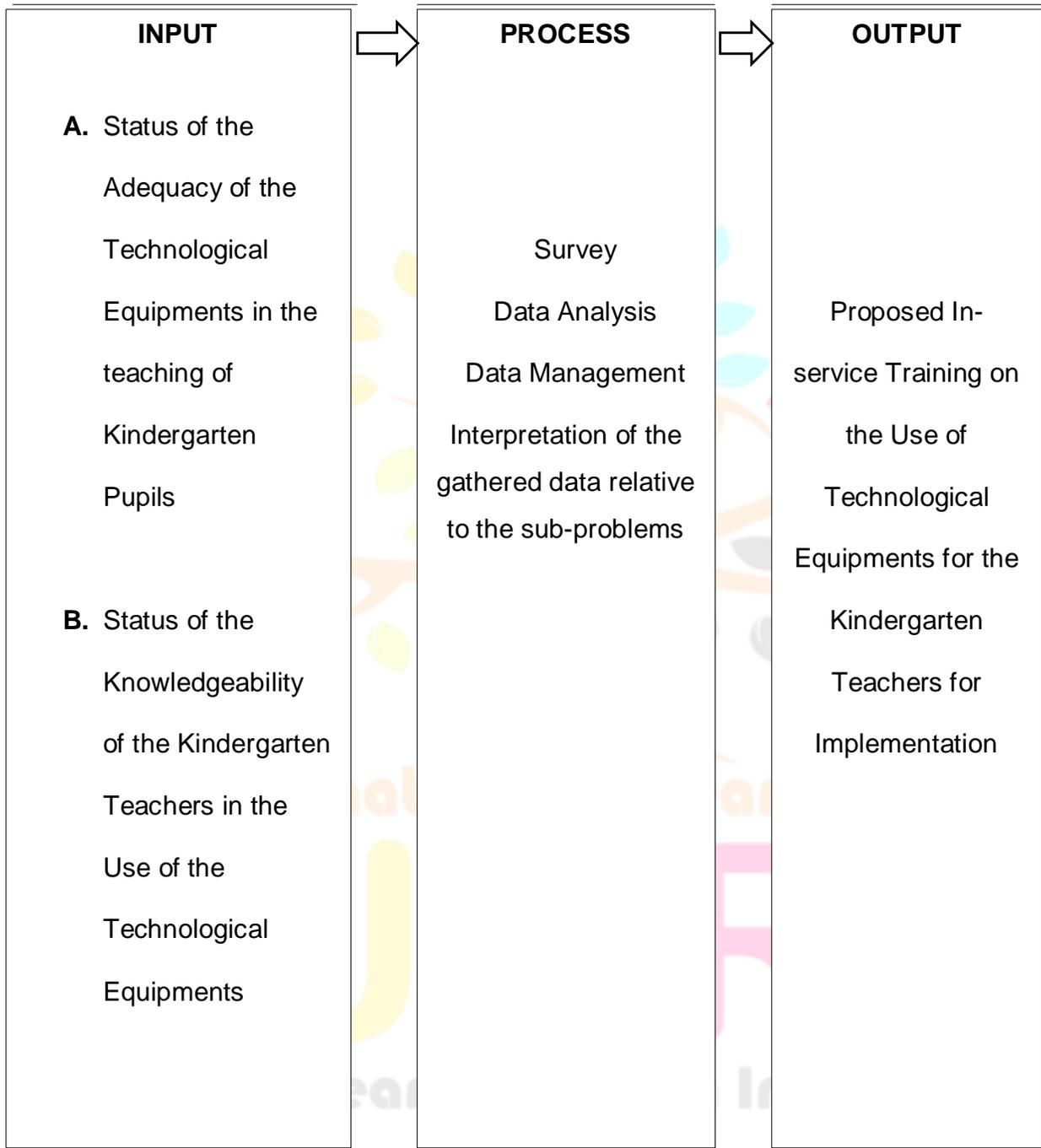
### **Conceptual Framework**

Republic Act No. 10157 was the legal basis of the study. It is also known as Kindergarten Education Act. In consonance with the Millennium Development Goals on achieving Education for All (EFA) by the year 2015, it is hereby declared the policy of the State to provide equal opportunities for all children to avail of accessible mandatory and compulsory kindergarten education that effectively promotes physical, social, intellectual, emotional and skills stimulation and values formation to sufficiently prepare them for formal elementary schooling. This Act shall apply to elementary school system being the first stage of compulsory and mandatory formal education. Thus, kindergarten will now be an integral part of the basic education system of the country.

Kindergarten education is vital to the academic and technical development of the Filipino child for it is the period when the young mind's absorptive capacity for learning is at its sharpest. It is also the policy of the State to make education learner-oriented and responsive to the needs, cognitive and cultural capacity, the circumstances and diversity of learners, schools and communities through the appropriate languages of teaching and learning.

The study used the I-P-O design. The inputs were the status in the teaching of kindergarten at Awai Elementary School in terms of the Adequacy of technology equipment needed in teaching. It also included the extent of the Kindergarten teachers' employment on the use of technology equipment in teaching along motivation, presentation, and development of the lesson, generalization and evaluation. The output was the technology-based lesson for kindergarten that was developed to enhance kindergarten pupils' knowledge and use of technology.

THE USE OF TECHNOLOGY EQUIPMENTS IN THE TEACHING OF  
KINDERGARTEN LEARNERS IN AWAI ELEMENTARY SCHOOL SAN  
JACINTO



**Figure 1.**  
**Paradigm of the Conceptual Framework of the**

**Statement of the Problem**

The study aimed to assess the status of the use of technological equipment’s in the teaching of Kindergarten learners of Awai Elementary School for the school year 2023-2024.

Specifically, the study sought answers to the following sub-problems:

1. What is the status of the adequacy of the technological equipment's in the teaching of Kindergarten learners in terms of the following:
  - a. desktop computer
  - b. Cd
  - c. tablets
  - d. interactive white board
  - e. television
  - f. radio
  - g. laptop
  - h. camera
  - i. e-notebook
  - j. projector?
2. What is the status of the knowledgeability of the kindergarten teachers in the use of the aforecited technological equipment's in their teaching?
3. What in-service trainings on the use of technological equipment's for the kindergarten teachers can be proposed for implementation?

### **Scope and Delimitation of the Study**

The study aimed to assess the status of the use of technological equipment's in the teaching of Kindergarten learners of Awai Elementary School for the school year 2023-2024.

All the kindergarten teachers of San Jacinto were the respondents for this study. The study was conducted on the first semester of the school year 2023-2024.

The study was delimited on the status of the adequacy of the technological equipments in the teaching of Kindergarten pupils in terms of desktop computer, Cd, tablets, interactive white board, television, radio, laptop, camera, e-notebook and projector. It also included the status of the knowledgeability of the kindergarten teachers in the use of the aforecited technological equipments in their teaching. The output then, was the proposed in-service training on the use of technological equipments for the kindergarten teachers for implementation.

### **Significance of the Study**

A Kindergarten teacher plays an essential role in preparing the school children to become knowledgeable, responsible, caring adults. The challenge of raising knowledgeable, responsible, and caring children is recognized by everyone.

To become a positive influence in the lives of the children, a Kindergarten teacher should possess socio-emotional competence because in the process of teaching and learning in school, he develops not only himself but the children he is teaching. The responsibility to develop children in school is premised on the basic idea of accomplishing the goals of the school as well as on the intention of assisting every child to actualize his potentials. More amazing is that the children learn well and develop their socio-emotional competence.

As a Kindergarten teacher, one must be aware and capable of the enormous responsibilities he has to shoulder as the teacher of Kindergarten learners. Pupils look up to him for guidance and direction. He must also be aware of his own strengths and weaknesses as a teacher. In the end, he serves may improve.

Various trainings are designed to help a Kindergarten teacher grow in his management, knowledge, and socio-emotional competence. His performance can be the basis in determining the areas where help is needed.

1. The results of the study are expected to help school administrators be aware of the training needs of their Kindergarten teachers.

2. Results will, likewise, help school administrators determine their strengths and weaknesses on the core teaching status. Hopefully, they will be able to enhance their level of competence through education and training.
3. The study is also expected to come up with recommendations for improving day-to-day performance of the Kindergarten teachers.
4. In the end, the children will immensely benefit from the results of this study since they are the direct beneficiaries of the improved level of competence of Kindergarten teachers.

### **Definition of Terms**

For clearer understanding, the researcher will operationally defined the following terms and variables.

**Kindergarten Teachers.** These refer to the hired teachers who are assigned to handle kindergarten in San Jacinto.

**Technology-based instructional materials.** These refer to the teaching-learning resources which will be the output of the study.

**Teaching Status.** This refers to the condition of the kindergarten teachers teaching Kindergarten at San Jacinto.

### **Related Literature**

#### **Technology in Kindergarten**

Every early childhood teacher extols the value of creative experiences that allow young children the opportunity to explore and manipulate a variety of materials. Physical interaction with the world and the involvement of all five senses – taste, touch, smell, hearing, seeing – is the way the young children learn. People can begin to know what they understand and how they perceive their world through their constructions and use that understanding to design a program that will build their skills. For the young child, the concrete and visible is real. Being able to hold and direct a pencil or paintbrush is not just about being able to form specific shapes that can then be turned into particular letters, but it is also about gaining control of one's own movements and making connections to others. It is also a starting place for literacy and for the knowledge that speech and words are tools for mastering the reality (George, 2010).

#### **How Can Technology Be Beneficial in a Kindergarten Class?**

Technology has a prominent place in schools and kindergarten classrooms are no exception. While technology does not take the place of vital, developmental play and hands-on learning, it adds to them, reinforcing traditional methods of teaching. When technology in a kindergarten class is designed to encourage young children, allow for creativity and connect to the curriculum, it benefits both the teacher and the students (LoBello, 2009).

#### **Increase Motivation**

Kindergarten students have notoriously short attention spans, but their interest is sparked by technology. When a teacher involves her students in a smart board program to extend their understanding of letter sounds, for example, she gives them the opportunity to interact physically, using keyboards and touch screens. A colorful animated screen captures their attention visually, keeping children interested for longer periods of time. Choosing their own programs for skill practice makes kindergarten feel empowered and encourages them to work independently.

#### **Reinforces Skills**

Kindergarten students are learning to practice letter, number and reading skills through interactive computer games as well as more traditional applications, according to Jill Buban, academic program manager for teaching and learning at Post University in Waterbury, Connecticut as cited by LoBello (2009). Some teachers

have replaced math workbooks with electronic tablet programs that give children immediate feedback and free the teacher to reach those children who need one-on-one help.

### **Differentiates Instruction**

Students are at various levels of understanding in core subject areas and it's not always an easy task for kindergarten teachers to consistently assess each child's strengths and weaknesses. Many kindergarten classrooms have access to computer labs, so students can work at their own pace, receiving remediation when needed or moving ahead for a challenge. These types of programs align with the common core standards, yet do not require all students to be on the same page at the same time.

### **Provides Electronics Portfolios**

Early childhood education consists of lots of hands-on projects. Teachers can document their students' progress by taking pictures with a digital camera. These photos serve as illustrations of the children's accomplishments and assessments of their growth. Explanations students give at a smart board can also be kept in a digital portfolio. The portfolios can be shared with families at conferences and given to the next year's teacher as a point of reference.

### **Encourages Collaboration**

Collaborative learning and social interaction prepare children for the future. When a group of kindergarten students listens to a recorded book or works together at the smart board to match letters and sounds, they are learning the valuable skill of working together. When four or five students gather around a smart table, they can join forces in activities such as dragging word names to their matching numbers. Two students sitting together at a computer to determine living and nonliving things on a science program learn to cooperate.

### **Use of Technology in Teaching and Learning**

Technology ushers in fundamental structural changes that can be integral to achieving significant improvements in productivity. Used to support both teaching and learning, technology infuses classrooms with digital learning tools, such as computers and hand held devices; expands course offerings, experiences, and learning materials; supporting learning 24 hours a day, 7 days a week; builds 21<sup>st</sup> century skills; increases student engagement and motivation; and accelerates learning. Technology also has the power to transform teaching by ushering in a new model of connected teaching. This model links teachers to their students and to professional content, resources, and systems to help them improve their own instruction and personalize learning.

Online learning opportunities and the use of open educational resources and other technologies can increase educational productivity by accelerating the rate of learning; reducing costs associated with instructional materials or program delivery; and better utilizing teacher time (<http://www.techlearning.com/news/0002/technology-integration-as-a-transforming-teaching-strategy/56552>).

It is true that adapting to new technology in the classroom takes some time and requires trial and error before teachers and students can start to see results. But once teachers get used to using technology in their lesson plans and when students perfect the skills needed to be successful with that technology, the results are quite impressive. Technology has proven to accelerate struggling students close the learning gap between those at the back of the class and the A-students. In fact, 78 percent of Kindergarten through Middle School teachers agree that technology has had a positive impact on their classroom – and that's just the start.

Including technology in the classroom give teachers more options and tools to cater to each student individually. Technology can improve focus and boost students' self-esteem, not to mention teach them valuable skills like fast, accurate typing and using online search engines to find trustworthy sources for research. It's difficult for under-funded schools to find the resources to bring technology into the classroom, but there are

organizations and grants available to schools all over the world that are there for just that. With a supportive community and teachers who are willing to be trained and embrace technology in their classes, students of every age are sure to benefit from the many tools and skills technology can offer (Hendricks, 2013).

### **The Role of Technology in Early Childhood Programs**

Educators are always looking for the magic bullet, something that will solve all the problems. And, today this magic bullet for education is technology. It will solve all the problems! It will increase academic skills, reduce dropout rates, eliminate the racial divide in academic performance, and increase SAT scores. And it will make the lives of teachers easier. Well, it may not accomplish all of these goals, but educational technology does have a place in early childhood. Right? It depends on an early childhood program's overall program goals and objectives, and the program's goals and objectives for each student. And it depends on how computers are incorporated into the early childhood curriculum (Haugland, 2010).

Most experts believe computers are not developmentally appropriate for children under the age of three (Elkind, 2008; Haugland, 2009); NAEYC, 2006). However, these same experts believe children three years old and older can begin to effectively explore and use computers. Surely, many of the factors that make computers developmentally inappropriate for children under age three are also present in older children: active learners busily manipulating a wide variety of objects... and in the process of learning about themselves and their environment" (Haugland, 2009).

To evaluate whether computers are developmentally appropriate for children over age three, we need to determine the developmental needs of these children. Children this age are developmentally within Piaget's preoperational stage. This means they are concrete learners who are very interested in using newly learned symbolic representation – speaking, writing, drawing (including maps and geometric figures) and using numbers. Further, children this age are extremely active and mobile. They often have difficulty sitting still; they need frequent changes in learning modalities; and they want a variety of physical experiences involving dance, physical play, climbing and sports. Preoperational children are also continuing their mastery of language, and exploring various facets of social behavior.

Howard Gardner has shown that young children exhibit a diversity of learning styles, and that the optimum way of many children to learn is not the traditional teacher-directed, verbal approach (Gardner, 1983). We must be sensitive to these different learning approaches, especially as we serve an even larger diversity of children.

Clearly many of these developmental needs match up well with appropriate use of technology in the classroom, especially exploration, manipulation of symbolic representation, matching alternative learning styles, and quickly changing learning modalities that individual students can control and pace to meet their individual needs. It is also a very powerful tool for students with specific learning disabilities.

The danger, however, is that computers will be used only to reinforce the national trend toward earlier and more academic skill acquisition, and that other important developmental needs will be ignored. Further, there is a danger that developmental needs not met through technology will be ignored or radically compromised: physical play, outdoor exploration of the community and of nature; art, music and dance; learning specific social skills and moral values, and experiencing diversity in a myriad of ways. Some also believe the easy access of information through computers will prevent our children from developing the persistence, ingenuity, tenacity, social adeptness and hard work needed to survive in the world. These are all realistic fears, based on the pressure of politicians and most parents, and the ever-present reality of very limited resources in most early childhood programs and elementary schools. And, finally, there is the reality that, all too often, computers are used in ways that are simply developmentally inappropriate – most often used for drill and practice purposes (Haugland, 2009).

To integrate computers effectively, these steps must occur: *First*, Create a support team that includes people knowledgeable of technology, and people who understand developmentally appropriate practice; *Second*, Select developmentally appropriate software; *Third*, Select developmentally appropriate web sites; *Fourth*, Select computers that can run the software selected, and that can be easily upgraded; *Fifth*, Provide adequate and periodic staff training, both on the use of computers., and on ways of integrating the computers into the curriculum; and *Sixth*, Integrate computer resources in the classroom (Wardle, 2008).

## Related Studies

### Foreign Studies

The study of Beschorner, B. & Hutchison, A. (2013) was entitled “*iPads as a Literacy Teaching Tool in Early Childhood*”. Considering the increased influence of digital technologies on daily life and young children’s increased use of interactive technologies, early childhood educators are beginning to think about the role of technology in their classrooms. Many preschool programs are beginning to purchase iPads, or similar tablets, for classroom use. Thus, it is important to consider how iPads, or similar tablets, can be used in developmentally appropriate manner with young children.

Islam et. al (2013) conducted a study on “*Interactive Digital Learning Materials for Kindergarten Students in Bangladesh*”. Traditional education system for preschool children is not updated in Bangladesh. Generally, parents and teachers are tried to teach children by introducing first alphabet and numbers in the form of text books. Sometimes it is quite difficult for teachers to teach play group about their first learning when they are not interested with it. The pedagogy of teaching and learning is changed with the proliferation of communication technology and it is necessary to develop interactive learning materials for children that may improve their learning, catching, and memorizing capabilities. Perhaps, one of the most innovations in the age of technology is multimedia and its application. It is imperative to create high quality and realistic learning environment for children. Interactive learning materials can be easier to understand and deal with their first learning. We developed some interactive learning materials in the form of video for playgroup using multimedia application tools. This study investigated the impact of student’s abilities to acquire new knowledge or skills through interactive learning materials. We visited one kindergarten (Nursery schools), interviewed class teachers about their teaching methods and level of students’ ability of recognizing English alphabets, pictures, etc. The course teachers were provided interactive learning materials to show their playgroups for a number of sessions. The video included English alphabets with related words and pictures, and motivational funs. We noticed that almost all children were very interested to interact with their learning video. The students were assessed individually and asked to recognize the alphabets, and pictures. The students adapted with their first alphabets very quickly. However, there were individual differences in their cognitive development. This interactive multimedia can be an alternative to traditional pedagogy for teaching playgroups.

Wambui (2013) in his study, “*Effect of Use of Instructional Materials on Learner Participation in Science Classroom in Preschool in Kiine Zone Kiirinyaga County Kenya*”, participation involves working with a partner or in a small group and brainstorming in order to create a stimulating learning environment. The role of instructional materials is to glue information into learners mind as what is seen is understood more than what is heard. During the formative years, learners add increasing qualities of knowledge to what is already learnt through explorations as they grow and expand horizon on the quality of content mastered. To widen mastery of concepts, rich learning environment which is filled with a variety of instructional materials tend to foster faster acquisition of requisite skills for sustained learning and development. Such an environment should be enticing learners to observe, actively participate, make choices and experiment which in the process results in acquisition of additional knowledge. In the absence of reach learning environment modeled by the teacher to capture requisite skills, knowledge and competence. The purpose of the study was to determine the effectiveness of use of instructional materials on learners’ participation in science lesson in preschool in Kiine Zone Kirinyaga county Kenya.

The objective of the study was to establish the importance of grouping of learners on participation in science classroom, to study the extent to which availability and adequacy improve learners' participation and to determine the effect of management of records on the improvement in learners' participation in science classroom. The study reviewed literature on effectiveness of instructional materials on participation in science classroom. This study was guided by experiential learning theory. This theory was propounded by Kolb (2008). Kolb proposed a four-staged learning process with a model that is often referred to in describing experiential learning Beaty (2009). The study involved a descriptive survey research design where qualitative data was collected. The design was non-experimental soliciting information from teachers on the IM use in teaching pupils in the pre-school. This study used stratified sampling since the population embraces a number of distinct categories of teachers' qualifications.

The study found that instructional materials are not effectively used in the study area due to large of number of learners per class, lack of enough compound in ECE centers, lack of learners' confidence, language barrier, teachers' negative attitude, lack of professional skills and domestic violence. The study recommended that ECE centers be increased to cater for the large number of learners per class. On the same, the study recommended that more teachers be employed and deployed to various ECE centers in the study area. The study further recommended that more playing ground be purchased to enable learners be participating fully especially while experiencing moving air by the use of kites they need to run over to note the moving air. Learners should be encouraged to handle IM even in the absence of teacher that is at home to gain confidence.

Parents of the learners who are shy should ne improvising IM at home and encourage children to continue practicing what they learnt at school. The study recommended that teachers to ensure learners with language barrier get information taught in class by the use of language they understand better as English and Kiswahili is introduced slowly by slowly. The study further recommended that GOK to employ ECE teachers with better pay. Finally the study recommended that the 5 untrained teachers and those with certificates work on the professional skills by going for Diploma course in ECE as lack of these skills deny any teacher the knowledge required in showing and teaching learners on how to handle IM during participation.

Ihmeideha, F. (2009) conducted a study entitled, *"The Role of Computer Technology in Teaching Reading and Writing: Preschool Teachers' Beliefs and Practices"*. This study investigated preschool teachers' beliefs and practices regarding the use of computer technology in teaching reading and writing in Jordan. The researcher developed a questionnaire consisting of two scales – Teachers' Beliefs Scale (TB Scale) and Teachers' Practices Scale (TP Scale) – to examine the role of computer technology in teaching reading and writing to preschoolers. A random sample of 154 preschool teachers participated in the study by completing the questionnaire; 12 teachers were later interviewed. Results indicated that the preschool teachers' beliefs about the use of computer technology were aligned with their perceptions of their teaching practices, although teachers' beliefs and their perceptions of their practices were fairly moderate. The results also revealed significant differences between kindergartens in favor of public kindergartens, and the training programs in favor of trained teachers, whereas there was no difference due to area of certification. Directions for further research and recommendations for policy and practice are discussed.

Another study by Erden (2010) was entitled, *"Problems That Preschool Teachers Face in the Curriculum Implementation"*. This study aimed at investigating the challenges preschool teachers face in the curriculum implementation and whether these challenges differ in relation to teachers' level of education, department they graduated from, the type of the school they are working in, teaching experience and level of in-service training. In addition, in this study, it was also aimed to find out the underlying reasons of most frequently stated issues of implementation from the teachers' perspectives.

In the study, both quantitative and qualitative data were collected. The quantitative data were gathers through a questionnaire from 223 preschool teachers teaching in public and private kindergartens in Ankara. The qualitative data were gathered through interviews with a group of participants selected from the 223 teachers.

One-way repeated measure of ANOVA and multivariate analysis of variance (MANOVA) were employed to analyze the quantitative data. For the qualitative data content analysis were conducted. The results indicated that the most frequently reported issues by the participants were the problems related to evaluation and physical facilities followed by the ones related to planning science and math activities, organizing field trips, providing parent involvement and inclusion. Results showed that the problems related to physical facilities experienced by preschool teachers working in public kindergartens were significantly differed compared to teachers working in private preschools.

Jie-Qi Chen & Charles Chang's (2006) study was on *Testing the Whole Teacher Approach to Professional Development: A Study of Enhancing Early Childhood Teachers' Technology Proficiency*. The contribution of early education to children's well-being and school success is widely recognized. Effective teachers are the most critical factor in the quality of a child's education. The key to sustaining teacher effectiveness and supporting continuous growth is high-quality professional development. Despite its critical importance, professional development for early childhood teachers is inconsistent and fragmented. The field of early education lacks a common conceptual framework to organize and integrate teacher development experiences. In this paper, the whole teacher development approach is proposed as an organizing framework. The approach is distinguished by its simultaneous focus on teacher attitudes, skills and knowledge, and practices. Also distinctive is its application of an integrated developmental framework that promotes teacher proficiency in a wide range of specific domains. To test the approach, a study of teachers' technology proficiency was carried out. The study of teachers' technology proficiency was carried out. The study analyzed relationships among teacher attitudes, skills, and practices, using data collected from teachers in the process of developing computer proficiency. Among teachers who participated in a technology program based on the whole teacher development approach, significant degrees of association among attitudes, skills, and practices were found. Further, program participants reported significantly higher levels of technology skill and classroom practice than nonparticipants. Distinctive features of the approach are compared to other professional development practices in early childhood education. Implications for conceptualizing and designing effective professional development programs for early childhood are discussed.

The study of Jerry Woodbridge (2014) was entitled, *Technology Integration as a Transforming Teaching Strategy*. This study of technology integration in the classroom involved 42 observations in 16 classrooms, 20 interviews, and 27 responses to an online survey. Teachers were selected with a common educational background in integrated learning and technological knowledge. Beliefs and classroom teaching strategies of teachers who participated in Jacksonville University's Master of Arts in teaching program were analyzed. Results revealed that the technology integration varied according to individual teaching beliefs, perceptions toward technology innovations, and how the teacher practiced and put technology to work in the classroom. Constructive teaching strategies were found in 50% of the classroom observations. If technology integration is a first step towards transforming teaching and learning, then understanding pedagogical possibilities can assist teachers in transforming their classroom practice.

Another study by Susan M. Gay (1997) entitled, *Teaching With Technology: A Case Study of Teachers' Perceptions of Implementing Computers into the Classrooms*. Schools are acquiring computers and internet access at rapid rates. Teachers need to learn how to operate the computers and integrate them effectively into their instructions. Understanding the process that teachers go through to infuse technology into their instruction is essential to help facilitate the successful integration of computers into classrooms.

This is a descriptive case study of five teachers' perceptions of the process of implementing technology into their teaching. The teachers' thoughts were collected through a variety of data collection methods including interviews, observations of both class periods and planning sessions, and e-mail correspondence. Profiles of the context in which each of the teachers were working are described along their perceptions of the process they have experienced in integrating technology into their instruction.

Time and access issues are the overarching issues with computer integration is dependent upon. The time and access issues apply both to school and home settings for teachers. Integrating computers into their teaching takes so much time that teachers often feel like a first-year teacher rethinking, redesigning, and creating curriculum activities which utilize computer technology effectively within the classroom setting. Time and support need to be provided to teachers at the planning stage of the lesson. The time teachers have to practice and plan technology lessons is a critical factor in determining if computers will be used effectively to achieve instructional objectives.

Teachers tend to learn by default rather than by design. They learn software applications and machine operating systems as they encounter tasks and glitches rather than through planned or guided instruction. Teachers perceive glitches as just a part of the process of using technology and perpetual in nature. However, teachers have varying amounts of control over solving glitches and can be held up anywhere from five minutes to five months depending on the situation. The computer is a complex teaching tool; however, teachers remain optimistic about its potential positive impact for students in the classroom.

### Local Studies

The study entitled, *“Early childhood development through an integrated program: evidence from the Philippines”* by Behrman, J. R. et al. (2012), stressed that more attention and resources have been devoted in recent years to early childhood development (ECD) in low- and middle-income countries. Rigorous studies on the effectiveness of early childhood development (ECD)-related programs for improving children’s development in various dimensions in the developing world are scant. The authors evaluate an important early childhood development (ECD) initiative of the Philippine government using longitudinal data collected over three years on a cohort of 6,693 children age 0-4 years at baseline in two “treatment” regions and a “control” region that did not receive the intervention. The initiative includes a wide range of health, nutrition, early education, and social services programs. The authors estimate its impact by using “intent-to-treat” difference-in-difference propensity score matching estimators to control for a variety of observed characteristics measured at the municipality, barangay, household, and child level and unobserved fixed characteristics, with differential impacts by the age of children and duration of exposure to the program. There has been a significant improvement in the cognitive, social, motor, and language development, and in short-term nutritional status of children who reside in ECD program areas compared to those in non-program areas, particularly for those under the age four at the end of the evaluation period. The proportions of children below age four with worms and diarrhea also have been lowered significantly in program compared to non-program areas, but there are effects in the opposite direction for older children so the overall impact on these two indicators is mixed.

With the increasing changes in society, family dynamics have been placed under pressure. Some children have both parents investing their time in economic responsibilities that merit stability for their own families. This results to young children being left under the supervision of their immediate families, caregiver, or childcare institutions. Franco’s 2009 thesis entitled, *“A Model of Home and School Partnership of Progressive Preschools in the Philippines”*, mentions that Filipinos place great emphasis on completion of higher education, and therefore, a major parental concern is sending their children to good schools.

In De los Angeles-Bautista’s article on Early Childhood Care and Education in the Philippines (2004), she explained that preschool education was expected to put children ahead, which assures parents that their children are capable of facing the first challenges in their school life. A study on the state of preschool education in the Philippines by Natividad Santos in 1990 revealed that education is a Filipino family concern as it is highly connected to one’s status. Santos explains further that families are willing to contribute and sacrifice in order that they can invest in one’s education. The Philippine society’s emphasis on education is exemplified by the continued proliferation of schools in the country. Therefore, there is also an increase in preschool enrollment.

## CHAPTER 2 METHODOLOGY

This chapter presents the research design, subjects, research instrument, data gathering procedure and statistical treatment of data that were utilized by the researcher in conducting the study.

### Research Design

The researcher used the descriptive method of investigation. According to Fraenkel and Wallen (2016), descriptive method is used to describe a given state of affairs as fully and carefully as possible and this requires a more detailed analysis of the various aspects of phenomena and their interrelationships. This was the appropriate method to use since this study calls for description and interpretation of quantitative data to describe the characteristics of the population (Bowerman and O' Connel, 2007). Data were collected, organized, classified, and interpreted. The study aimed to assess the status of the use of technological equipments in the teaching of Kindergarten learners of San Jacinto for the school year 2023-2024. The descriptive method of research is the most appropriate.

The study also described the status of knowledgeability of the kindergarten teachers in the use of the aforesaid technological equipments in their teaching.

### Sources of Data

The target population of this study was the thirty (30) kindergarten teachers in San Jacinto served as the respondents for this study. Purposive sampling was used in the selection of respondents.

### Instrumentation and Data Collection

The instrument of the study was the questionnaire. The researcher used the questionnaire because it gathers data faster than any other method. The questionnaire was validated through content validity. The suggestions of the panel were incorporated.

Prior to the administration of the final copies of the questionnaire, a letter of request to conduct the study was submitted to Dr. Maria Celia Junio-Fernandez, Schools Division Superintendent for approval. This was done to get the support and cooperation of higher authorities in the conduct of the study.

The gathering of data was made possible through the collection and analyses of data that provided by the respondents who accomplished the given questionnaire. In accomplishing the questionnaire, the researcher scheduled it during the respondents' break time and it was done in their respective assignment. The researcher travelled to the different schools and gave the questionnaires to the respondents personally. The researcher acted as the facilitator, and in this capacity, she read the cover letter, followed by the instructions, and each item in the questionnaire was read and answered one at a time.

### Tools for Data Analysis

The following tools were used in the study. Average weight mean was used to determine the status of the adequacy of the technological equipments in the teaching of Kindergarten learners.

The descriptive rating and interpretation were as follows:

Number	Limits	Descriptive Interpretations
5	4.21-5.00	Very Much Adequate (VMC)
4	3.41-4.20	Much Adequate (MA)
3	2.61-3.40	Moderately Adequate (M)
2	1.81-2.60	Less Adequate (LA)
1	1.00-1.80	Not Adequate (NA)

Average weighted mean was used to determine the status of the knowledgeability of the kindergarten teachers in the use of the aforementioned technological equipments in their teaching.

The descriptive rating and interpretation were as follows:

Number	Limits	Descriptive Interpretations
5	4.21-5.00	Very Much Knowledgeable (VMk)
4	3.41-4.20	Much Knowledgeable (MK)
3	2.61-3.40	Moderately Knowledgeable (M)
2	1.81-2.60	Less Knowledgeable (LK)
1	1.00-1.80	Not Knowledgeable (NK)

### **CHAPTER 3**

## **PRESENTATION, ANALYSIS AND INTERPRETATION OF THE DATA**

This chapter presents the data gathered in the study which were analyzed. The data were treated statistically after which they were interpreted in order to elicit answers to the research problems.

The presentation of the results is done in tabular forms. Descriptive analysis was employed and inferences were drawn from the computed data. The findings are presented below.

### **STATUS OF THE ADEQUACY OF THE TECHNOLOGICAL EQUIPMENTS IN THE TEACHING OG KINDERGARTEN LEARNERS**

The use technology in the early childhood program must not be a goal unto self: the purpose is not to teach how to use computers; they can do this as they get older, just as they can learn to drive a car later in their lives (Wardle, 1999). Appropriate use of technology in the classroom is to expand, enrich, implement, individualize, differentiate, and extend the overall curriculum.

Table 1 shows the status of the adequacy of the technological equipments in the teaching of kindergarten pupils.



**Table 1**  
**Adequacy of the Technological Equipment's in the Teaching of Kindergarten Learners**  
**N=30**

<b>Adequacy of technology equipment</b>	<b>AWM</b>	<b>I</b>
Desktop Computer	3.95	MA
CD	4.21	VMA
Tablets	3.05	M
Interactive white board	3.26	M
Television	4.32	VMA
Radio	4.58	VMA
Laptop	4.21	VMA
Camera	4.05	MA
E-notebook	2.47	LA
Projector	3.05	M
<b>Overall Weighted Mean</b>	<b>3.72</b>	<b>MA</b>

Legend: 4.21-5.00 Very Much Adequate (VMA)  
3.41-4.20 Much Adequate (MA)  
2.61-3.40 Moderately Adequate (M)  
1.81-2.60 Less Adequate (LA)  
1.00-1.80 Not Adequate (NA)

The table shows that the status of the adequacy of the technological equipment's in the teaching of Kindergarten Learners in San Jacinto is much adequate with the overall weighted mean of 3.72.

Furthermore, the table reveals that the radio (4.58); television (4.32); laptop and Cd (4.21), camera (4.05) and desktop computer (3.95) are much adequate in the teaching of the Kindergarten pupils.

Depending on the availability of equipment, opportunities for students to use technology may occur in a designated area of the classroom. Learning experiences which integrate curriculum outcomes should actively engage the student in an activity. The selection of software and web sites must be developmentally appropriate during computer time and the activity should encourage creativity and independence.

Therefore, the results show that preschool and kindergarten children should first be introduced to computers one at a time, or in a small groups. Every child should have an opportunity to experience ample hands-on opportunity to explore 4-5 different software programs. Once each child has had this hands-on experience, the computer center becomes one of many equally important learning centers. It should have several chairs close by, to encourage children to work together, and to encourage the more advanced students to act as peer tutors. This also develops cooperative learning activities. Teacher and other adults should resist interfering or helping the children. The maximum number allowed for the center should be determined, and a waiting list established. Children should place their name- or name tag if they cannot write- on the list.

This approach cannot be implemented with only one computer in the classroom. Haugland suggests a ratio of one computer to seven students, the best situation being one to five. If there are not enough computers go around, it's better to have two or three in one classroom for a month or two, and then move them into another classroom, than to have one in each classroom all the time (Haugland, 1999).

To fully integrate computers into the curriculum teachers should take the goals of the curriculum and find ways these can be implemented. Further, since it takes time and effort to this, it is advisable to start with one curriculum area, such as language art, or social studies, and adapt that curriculum to include computer integration, before moving one to another.

The use of computers in a fully integrated classroom is endless. Software can be used to create books, with dictated tests and illustrations; photos of children and the community can be taken with digital cameras and then combined with text and pictures to create journals, biographies, wall newspapers, school/home communications, and neighborhood documents. Older children can use scanners, font selection, and various graphics application, to develop power-point presentation to show the rest of the class and parent gatherings. And, of course, Internet sites can be accessed to do research on almost all topics. There are also wonderful opportunities for correspondence activities with children throughout the world.

Likewise with the other technological equipments such as radio (4.58); television (4.32); laptop (4.210); and camera (4.05) are also considered to be much adequate. Obviously, curricula goals change with age, and differ from program to program. If a goal of the literacy curricula for a certain age child is to learn to write personal journals, then the computer can naturally support that through writing software, digital cameras, and other methods. A science goal that requires learning the habitat of different zoo animals can be augmented by using specific CD ROMS and accessing zoo web sites. Similarly, studying extinct and endangered animals becomes more real and educational through the use of specific software and websites.

Also, the use of digital camera and/ or a tape recorder allows students the opportunity to document and extend their learning.

Thus, there should be adequacy of the technological equipment's in the teaching of Kindergarten learners of San Jacinto to address the kindergarten pupils vis-à-vis literacy and numeracy. If computers are not fully integrated into the overall curriculum, they can actually negatively impact children's creativity (Haugland, 1992).

On the other hand, previous researchers found that kindergarten students gained learning skills through interacting with multimedia contents (Nusir et. al, 2011). Moreover, multimedia has the potential to create high quality learning environments especially for children, with the capability of creating a more pragmatic learning context through its different medias- texts, graphics, sound, animation etc.

An animation media can help children expand their English vocabulary and receive higher average score than those who apply the normal one at statistical significance level of 0.01 (Kittidachanupap et. al, 2012). The researchers commented that the animation method is a beneficial teaching material to stimulate and support the learners, especially at 5 to 6 years old to enjoy the class with good results.

However, e-notebook (2.47) is less adequate. Other such as Interactive white board (3.26); tablets and projectors (3.05) are moderately adequate. In the study of Beschorner, B. & Hutchison, A. (2013), considering the increased influence of digital technologies on daily life and young children's increased use of interactive technologies, early childhood educators are beginning to think about the role of technology in the classrooms. Many preschool programs are beginning to purchase iPads, or similar tablets, for classroom use.

In the study of Gay (1997), schools are acquiring computers and Internet access at rapid rates.

## **STATUS OF THE KNOWLEDGEABILITY OF THE KINDERGARTEN TEACHERS IN THE USE OF THE TECHNOLOGICAL EQUIPMENTS**

Adding technology to a preschool or kindergarten classroom is always a little bit tricky. You have to walk a fine line. On one hand, we know that when delivered in the right fashion, technology instruction can be beneficial for young children (Nelson, 2015).

Table 2 shows the status of the knowlegeability of the kindergarten teachers in the use of the aforesaid technological equipment's in their teaching.

**Table 2**  
**Knowledgeability of the Kindergarten Teachers in the Use of Technological**  
**Equipment's in Teaching**  
**N=30**

<b>Knowledgeability on how to use the technological equipment</b>	<b>AWM</b>	<b>I</b>
Desktop Computer	4.21	VMK
CD	4.11	MK
Tablets	4.00	MK
Interactive white board	3.16	M
Television	4.74	VMK
Radio	4.63	VMK
Laptop	4.00	MK
Camera	4.32	VMK
E-notebook	3.11	M
Projector	3.11	M
<b>Overall Weighted Mean</b>	<b>3.94</b>	<b>MK</b>

Legend: 4.21-5.00    Very Much Knowledgeable (VMK)  
3.41-4.20        Much Knowledgeable (MK)  
2.61-3.40        Moderately Knowledgeable (M)  
1.81-2.60        Less Knowledgeable (LK)  
1.00-1.80        Not Knowledgeable (NK)

It can be gleaned on table 2 that the status of the knowledgeability of the kindergarten teachers in the use of the aforecited technological equipment's in their teaching is generally much knowledgeable with the overall weighted mean of 3.94. It is imperative to create high quality and realistic learning environment for children. Interactive learning materials can be easier to understand and deal with their first learning.

This is supported by the study of Gay (2017) that teachers need to learn how to operate the computers and integrate them effectively into their instruction.

Understanding the process that teachers go through to infuse technology into their instruction is essential to help facilitate the successful integration of computers into classrooms.

This implies that in most early childhood programs and schools, technology will be part of the learning landscape of the future. To make sure this new technology is used effectively, teachers are fully trained and supported, and that the programs and Internet sites used are developmentally appropriate, nonsexist, nonracist, non-biased against people with disabilities, and respect religious differences. Further, the technology must be fully integrated with the program's educational goals and objectives. And, it is critical that computers do not drain critical resources from other essential instruction – both material and staff training – and that they do not become an agent or excuse for the early childhood field to retreat from the commitment to educate the whole child in developmentally appropriate ways.

Also, the study of Islam et. al (2013) supported the results of the study. The course teachers were provided interactive learning materials to show their playgroups for a number of sessions. The video included English alphabets with related worlds and pictures, and motivational funs. It was notices that almost all children were very interested to interact with their learning video. The students were assessed individually and asked to recognize the alphabets, and pictures. The students adapted with their first alphabets very quickly. However,

there were individual differences in their cognitive development. This interactive multimedia can be an alternative to traditional pedagogy for teaching playgroups.

## **PROPOSED IN-SERVICE TRAINING ON THE USE OF TECHNOLOGICAL EQUIPMENTS FOR THE KINDERGARTEN TEACHERS FOR IMPLEMENTATION**

Young children learn by doing and actively engaging with materials, equipment, and people in their learning environment.

Based on the findings, the kindergarten teachers in general are much knowledgeable in the use of the technological equipment's in their teaching. However, they are moderately knowledgeable in the use of Interactive white board (3.16); E-notebook (3.11) and Projector (3.11). Thus, in-service training on the use of technological equipment's for the kindergarten teachers for implementation was proposed.

Table 3 shows the proposed in-service training on the use of technological equipment's for the kindergarten teachers for implementation.

### **CHAPTER 4 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

This chapter presents the conclusions drawn and recommendations made in the study.

#### **SUMMARY**

The researcher used the descriptive method of investigation. The study aimed to assess the status of the use of technological equipment's in the teaching of Kindergarten learners of San Jacinto for the school year 2023-2024. The respondents of this study were the thirty (30) kindergarten teachers of San Jacinto. Purposive sampling was used in the selection of respondents. The instrument of the study was the questionnaire. The questionnaire was validated through content validity. Average weighted mean was used in the study as tools in data analysis.

#### **Findings**

The following were the significant findings of the study:

1. The status of the adequacy of the technological equipment's in the teaching of Kindergarten pupils is much adequate with the overall weighted mean of 3.72.
2. The status of knowledgeable of the kindergarten teachers in the use of the technological equipment's in their teaching is much knowledgeable with the overall weighted mean of 3.94.
3. Based on the results, the researcher proposed in-service training for implementation to enhance the knowledge of the Kindergarten teachers on how to use the technological equipment's in the teaching of the Kindergarten pupils.

#### **CONCLUSIONS**

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

1. Technology lends itself to many opportunities for numeracy and literacy experiences when the area and activities are designed appropriately for the kindergarten child depending on the adequacy of the technological equipment's.
2. The Kindergarten teachers are equipped with technological know-how to use the technological equipment's in the teaching of the Kindergarten pupils.

3. The proposed in-service training can be of great help in enhancing the knowledge of the Kindergarten teachers on how to use the technological equipment's in the teaching of the Kindergarten pupils.

## RECOMMENDATIONS

Based from the drawn conclusions of the study, the following were recommended:

1. Teachers should strive to use technology in ways where it is particularly powerful: individualizing, addressing learning disabilities and different learning styles, and bringing the world into the classroom.
2. The experience on the use of technological equipment's should allow for participation, close up viewing/ observation, touching and questioning within the child's level of thinking and reasoning while reinforcing, extending and enriching a child's learning.
3. The proposed in-service training program should be implemented with the approval of the proper authorities.
4. Similar study should be conducted as a follow-up.

## BIBLIOGRAPHY

### Books

- Arikan, (2010). Using information and communication technologies (ICT) with young learners: Tools, and practical ideas. In D. Sahhusynoglu & D. Ilisko (Ed.), *How do children learn best* (pp. 98-103). Ankara, Turkey: Tutkun Press.
- Cameron, L. (2005). *Teaching languages to young learners*. United Kingdom: Cambridge University Press.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic.
- Harmer, J. (2007). *The Practice of English Language Teaching*. London: Longman
- Howes, Carollee, Claire E. Hamilton, and Catherine C. Matheson. (1994). Children's Relationships with Peers: Differential Associations with Aspects of the Teacher-Child Relationship. *Child Development* 65 (1): 253-263
- Linse, C. T. (2005). *Practical English language learners: Young learners*. United States: McGraw-Hill Publishing.
- McKay, P. (2006). *Assessing young language learners*. Cambridge: Cambridge University Press.
- Pianta, Robert C., Bridget K. Hamre, and Megan W. Stuhlman (2003). Relationships between Teachers and Children. In *Educational Psychology*, Vol. 7 of *Comprehensive Handbook of Psychology*, ed. William M. Reynolds and Gloria E. Miller, 199-234. New York: Wiley.
- Printer, A. (2006). *Teaching young language learners*. Oxford: Oxford University Press.
- Rixon, S. (1999). *Young learners of English: Some research perspectives*. London: Longman.

### Published Materials

- Arikan, A., Ulas-Tarah, H. (2010). Contextualizing young learners' English lessons with cartoons: Focus on grammar and vocabulary. *Procedia-Social and Behavioral Sciences* 2 (2), 5212-5215, World Conference on Educational Sciences, Istanbul, Turkey.
- Beschorner, B. & Hutchison, A. (2013). iPads as a literacy teaching too in early childhood. *International Journal of Education in Mathematics, Science and Technology*, 1(1), 16-24.
- Brooks, M; Pui (2010). "Are individual differences in numeracy unique from general mental ability? A closer look at a common measure of numeracy." *Individual Differences Research*.4 8:257-265
- Damar, M. (2009). Okuloncesiegitimdediletlinlikleri. *MilliEgitimDergisi*, 38(182), 96-105
- Doll, Beth. (1996). Children without Friends: Implications for Practice and Policy. *School Psychology Review* 25 (2): 195-183.

- Eksi, G. (2009). Multiple short story activities for very young learners with multiple tastes. *EKEV AkademiDergisi*, 13(40), 51-68.
- Elkind, D. (1998). Computer for infants and young children. *Child Care Information Exchange*. 123, 44-46.
- Hamre, B. K., and Robert C. Pianta.(2001). Early Teacher-Child Relationships and the Trajectory of Children's School Outcomes through Eighth Grade. *Child Development* 72 (2): 625-638
- Haugland, S. W. (1999). What role should technology play in young children's learning? *Young Children*, 54 (9), 26-30.
- Hauland, S. W. (1992). Effects of computer software on preschool children's developmental gains. *Journal of Computing in Early Childhood*, 3 (1) 15-30
- Ihmeideha, F. (2009). The Role of Computer Technology in Teaching Reading and Writing: Preschool Teachers' Beliefs and Practices. *Journal of Research in Childhood Education*, Volume 24, Issue 1, 2009.
- Islam. B., Kabirul Islam, Arif Ahmed, Abu Kalam Shamsuddin. (2013). *Interactive Digital Learning Materials for kINdergarten Students in Bangladesh*. Department of Multimedia Technology and Creative Arts, Daffodil International. University, Dhaka-1207, Bangladesh.
- Johnson, D.L., & Liu, L. (2000). First Steps toward a statistically generated information technology integration model. *Computers in the Schools*, 16 (2), 3-12.
- Langer, J., & Applebee, A. N. (1987). *How writing shapes thinking: Study of teaching and learning*. Urbana, IL: National Council of Teachers of English.
- NAEYC (1996). Position statement of technology and young children – ages three through eight. *Young Children*, 51(6), 11-16.
- Prawat, R. S., & Floden, R. E. (1994). Philosophical perspectives on constructivist views of learning. *Educational Psychology*, 29(1), 37-48.
- Resnick, Michael D., et al. (1997). Protecting Adolescents from Harm: Findings from the National Longitudinal Study of Adolescent Health. *Journal of the American Medical Association* 278 (10): 823-832.
- Savery, J. R., & Duffy, T. M. (1995). Problem based learning: An instructional model and its constructivist framework. *Educational Technology*, 35(5), 31-38.
- Statistics Canada. "Building on our Competencies: Canadian Results of the International Adult Literacy and Skills Survey" (PDF). Statistics Canada.p.209.
- Wardle, F. (1999). How children learn: Foundations for learning. *Children and Families*, 13(3), 66.

### Unpublished Researches

- Chen, J. & Charles Chang. (2006). Testing the Whole Teacher Approach to Professional Development: A Study of Enhancing Early Childhood Teachers' Technology Proficiency. Thesis. Erikson Institute.
- Erden, E. (2010). Problems that Preschool Teachers Face in the Curriculum Implementation. Thesis. Middle East Technological University.
- Gay, S.M. (1997). *Teaching With Technology: A case Study of Teachers' Perceptions of Implementing Computers into the Classroom*. University of Nebraska.
- Kittidachanupap, N. J. Singthongcai, E. Naenudorn and N. Khopolklang. (2012). Development of animation media for learning English vocabulary for children. *IEEE International Conference on Computer Science and Automation Engineering*, May 25-27, Zhangjiajie, China, 2012.
- NUsir, S., I. Alsmadi, M. Al-kabi, and F. Shardqah. (2011). Designing an Interactive Multimedia Learning System for the Children of Primary Schools in Jordan", *IEEE Global Engineering Education Conference (EDUCON)*, April 4-6, Amman, Jordan, 2011.
- Wambui, S. E. (2013). Effect of Use of Instructional Materials on Learner Participation in Science Classroom in Preschool in Kiine Zone Kirinyaga County Kenya. Department of Educational Communication and Technology. University of Nairobi.



### Others

- Behrman, J.R. and Elizabeth M. King. (2012). Early childhood development through an integrated program: evidence from the Philippines. [http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2006/05/11/000016406\\_20060511122104/Rendered/PDF/wps3922.pdf](http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2006/05/11/000016406_20060511122104/Rendered/PDF/wps3922.pdf). <http://ideas.repec.org/p/wbk/wbrwps/3922.html>
- Culatta, R. (2011). Teaching Theories. [http://innovativelearning.com/teaching/teaching\\_methods.html](http://innovativelearning.com/teaching/teaching_methods.html)
- Franco, P.T. (2009). A Model of Home and School Partnership of Progressive Preschool in the Philippines. <http://smartparenting.com.ph/kids/preschooler/the-different-teaching-approaches-which-one-fits-your-preschooler>
- George, F. (2010). Technology in Kindergarten <http://www.smartparenting.com.ph/kids/preschooler/the-different-teaching-approaches-which-one-fits-your-preschooler>
- George, F. (2010). Technology in Kindergarten <http://digitals.nwp.org/collection/technology-kindergarten>. Retrieved October 25,2010.
- Hendricks, D. (2013). A look at recent Findings on Technology in the Classroom. [http://www.huffingtonpost.com/drew-hendricks/technology-education\\_b\\_2867458.html](http://www.huffingtonpost.com/drew-hendricks/technology-education_b_2867458.html). Retrieved on March 14, 2013
- LoBello, K. (2009). How Can Technology Be Beneficial in a Kindergarten Class? <http://everylife.globalpost.com/can-technology-beneficial-kindergarten-class-6647.html>
- Nelson, K. (2015). 6 Hands-On Center Ideas for Using Technology in Pre-K and Kindergarten. <https://www.weareteachers.com/blogs/post/2015/06/04/6-hands-on-center-ideass-for-using-technology-in-pre-k-and-kindergarten>.
- Steinberg, D. (n.d.). Developing and Cultivating Skills through Sensory Play. <http://www.pbs.org/parents/child-development/sensory-play/developing-and-cultivating-skills-though-sensory-play/>
- Use of Technology in Teaching and Learning. <http://www.ed.gov/oii-news/use-technology-teaching-and-learning>
- Wardle, F. (2008). The Role of Technology in Early Childhood Programs. [http://www.earlychildhoodnews.com/earlychildhood/article\\_view.aspx?ArticleID=302](http://www.earlychildhoodnews.com/earlychildhood/article_view.aspx?ArticleID=302)
- Woodbridge, J. (2004). Technology Integration as a Transforming Teaching Strategy. <http://www.techlearning.com/news/0002/technology-integraion-as-a-transforming-teaching-strategy/56552>
- Yolageldili, G., Arikan, A. (2010). Effectiveness of using games in teaching grammar to young learners". Elementary Education Online, 10(1), 219-229. <http://www.education.com/reference/article/constructivism/>

IJNRD  
Research Through Innovation

## APPENDICES

### APPENDIX A

Lyceum-Northwestern University  
Dagupan City

The Schools Division Superintendent  
Schools Division Office II Pangasinan  
Binalonan, Pangasinan

Madam:  
Greetings!!!

Presently I am conducting a research work entitled “**THE USE OF TECHNOLOGY EQUIPMENTS IN THE TEACHING OF KINDERGARTEN LEARNERS IN AWAI ELEMENTARY SCHOOL SAN JACINTO**” in partial fulfillment to the requirements for the degree Master of Arts in Education at the Lyceum-Northwestern University, Dagupan City this academic for 2023-2024.

In this connection, may I ask permission from your good office to float my questionnaire to the Kindergarten Teachers in Public Elementary School in San Jacinto.

Thank you very much and hoping for your favorable action.

Very truly yours,

**EVELYN S. RONQUILLO**

Researcher

Noted:

**CHRISTOPHER A. DE VERA, ED. D**

Adviser

Approved

**VIVIAN LUZ S. PAGATPATAN, ED. D**

Schools Division Superintendent

### APPENDIX B

#### Questionnaire

## THE USE OF TECHNOLOGICAL EQUIPMENTS IN THE TEACHING OF KINDERGARTEN LEARNERS IN SAN JACINTO

Name (optional): \_\_\_\_\_

School: \_\_\_\_\_

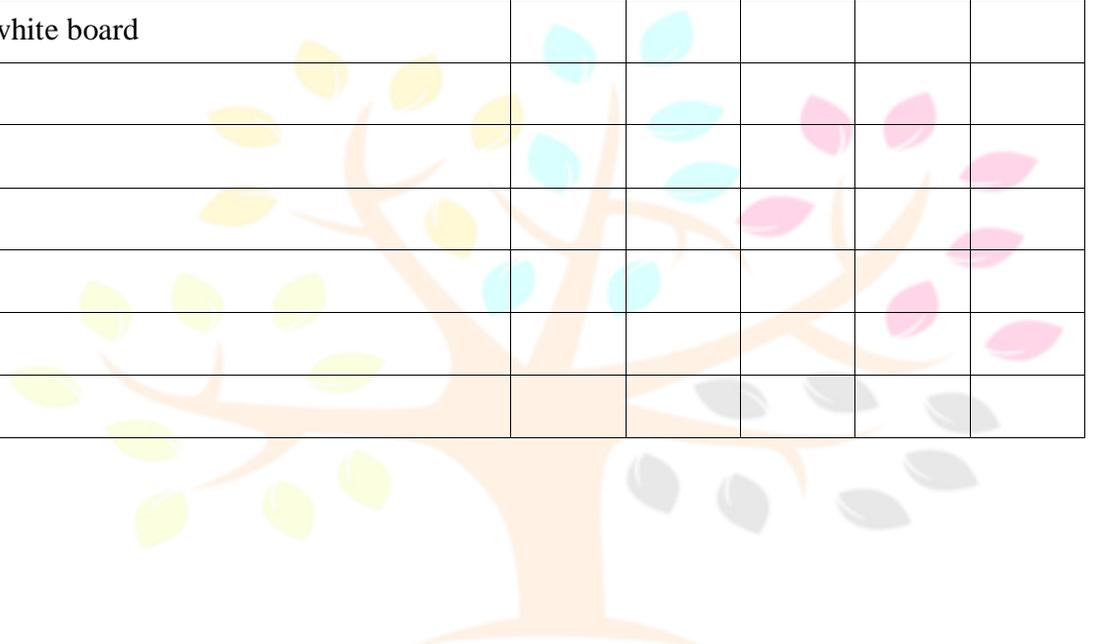
### STATUS OF THE ADEQUACY OF TECHNOLOGICAL EQUIPMENT

**Direction:** Below are identified technological equipment's in the teaching of Kindergarten. As a teacher, please assess yourself honestly about its status using the scale below:

Legend:

- 5 – Always                      Very Much Adequate (VMA)
- 4 – Often                        Much Adequate (MA)
- 3 – Sometimes Moderately Adequate (M0)
- 2 – Seldom                      Less Adequate (LA)
- 1 – Never                        Not Adequate (NA)

<b>Adequacy of technology equipment</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
Desktop Computer					
Cd					
Tablets					
Interactive white board					
Television					
Radio					
Laptop					
Camera					
E-notebook					
Projector					



International Research Journal

IJNRD

Research Through Innovation

## II- STATUS OF THE KNOWLEDGEABILITY OF TECHNOLOGICAL EQUIPMENT

**Direction:** Below are identified technological equipment's in the teaching of Kindergarten. As a teacher, please assess yourself honestly on how knowledgeable you are in the use of the technological equipment's using the scale below:

Legend:

- |               |                               |
|---------------|-------------------------------|
| 5 – Always    | Very Much Knowledgeable (VMK) |
| 4 – Often     | Much Knowledgeable (MK)       |
| 3 – Sometimes | Moderately Knowledgeable (M0) |
| 2 – Seldom    | Less Knowledgeable (LK)       |
| 1 – Never     | Not Knowledgeable (NK)        |

Knowledgeability on how to use technological equipment	5	4	3	2	1
Desktop Computer					
Cd					
Tablets					
Interactive white board					
Television					
Radio					
Laptop					
Camera					
E-notebook					
Projector					