

The benefits and challenges of using technology in early childhood education

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## Introduction:

Most of the current generation grew up finding themselves surrounded with technology as a main tool of entertainment and communication. Therefore, in order to attract these young learners' curiosity, teachers need to utilize technology not only to facilitate students' learning, but also to engage them. There are many different tools of teaching available such as computers, iPads, projectors, and smart boards. For these reasons, I want to utilize technology in my classroom to change the traditional learning style in my Saudi Arabian classroom. Early childhood teachers often use posters, pictures, or tangible items in their lessons to help students understand clearly, and some teachers use short videos that are related to their subjects. However, they often do not use other kinds of technology in their classroom.

Technology is one way to help students become successful in the classroom. Tracey and Young (2007) conducted a study to determine whether or not literacy software is successful for kindergarten students to help them in reading skills. The authors believe that it is important to teach the children essential and foundational skills of literacy before they start their first grade school year to protect them from the risk of starting at a great disadvantage. They believe that using computers in the classroom provides collaborative learning. The authors chose to use a special software program, the Waterford

Early Reading Program Level 1 in 1976. This program was created to promote the effective use of technology in education. The software targets early literacy skills such as letter recognition, phonemic awareness, vocabulary, and comprehension skills. This instruction was accomplished through 15 minutes of daily computer activities. Students were given an individual account, which monitors their progress. There were eight experimental classrooms and each of them was given a full set of software, hardware, and teacher's guide. Also, each student was provided a set of early reading books to take home along with some videotape. They were given individual tests to improve their ability in letter, word, and sound skills. The software company who created the Waterford program visited the classroom four to six times during the school year.

Using technology in early childhood settings requires teachers to prepare themselves to use technology in early childhood language instruction. This includes developing the teacher's technical skills and having a basic knowledge about hardware and software to help them prepare a useful lesson for helping students to be successful. There are some effective strategies to integrate technology to assess students in their language learning such as using a smart board and an iPad. Moreover, building community, achieving a high level of cognitive, technological, and fine motor skills, among the students and teachers, are the benefits of integrating technology into early childhood language

instruction. Finally, there are challenges in using technology in early childhood settings. These include not enough computers, not enough time, teachers who are not trained, and family and teacher's positions on using technology.

#### Significance of this Study:

Technology is now becoming one of the most important educational tools that teachers can use to express their knowledge to the current generation. Changing teaching strategies is important to follow the changing usage of technology, which has had a big impact in education. Green, Clancy, and Challoo (2012) said:

Teachers and students have become more comfortable and familiar with technology in their lives outside of school. Because of this, the demand from both the public and educators to find a way to use technology effectively in education has grown. The question has become not if technology should be used in conjunction with traditional education, but how to implement technology in instruction. How technology can enhance reading instruction in the early childhood classroom is a subject that has been of great interest to the professionals that teach reading in the early childhood classroom. (p. 1811)

Therefore, professional teachers should develop and improve their

technology skills.

### Research Questions:

1. What are the benefits of using technology in early childhood language instruction?
2. What are the challenges of using technology in early childhood language instruction?
3. How will I use this information to change my teaching methods in Saudi Arabia?

Early childhood teachers need to develop appropriate lesson plans that help young students learn. Powell, Diamond, and Koehler (2010) examined a case-based Hypermedia Resource (HR) in a literacy coaching intervention with prekindergarten teachers who used a specific web-based coaching program. The case-based HR is a form of web-developed instruction for teachers. The HR company provided video descriptions and explanatory text for how to improve the teacher's ability to teach literacy. Each HR is a video example of about 2-3 minutes in length. The content of each video lesson can be divided into five categories (reading, writing, conversation with children, phonological sensitivity, and individualization and responsiveness). The HR video was linked to information text. Teachers should use HR by planning a lesson for literacy instruction. While the teacher taught that lesson, a video camera was recording

it. Then the videotape lesson was submitted to their coach to have feedback about it. Powell, Diamond, and Koehler (2010) analyzed two areas of HR use: web perspective, which counts the number of time that the information is accessed, and the teacher perspective, which tells what information was most helpful. In the web perspective, 75% of all visits were short and about video examples; 9% of long visits were to pages that provided instructional practices. The number who used five categories is greater than expected because the teachers were willing to use technology. As a result, teacher practice is the most important way to receive the effect of technology usage in the classroom. This study shows that HR is an effectual way to provide technology support to early childhood teachers.

#### Theoretical:

There is hardware that early childhood teachers need to know how to use. In order for teachers to practice using technology in the classroom, they should have basic knowledge and skills. Hourcade, Parette, and Boeckmann (2010) noted that is important for teachers to be able to use certain basic elements of technology. This includes hardware such as a Digital Camera and Large Computer Display and software such as Microsoft PowerPoint, Clickers, and Communicate. Using this kind of hardware and software helps student to learn by making connections between the concepts and images. Teachers should

have a guideline to apply software and hardware in the classroom. Lin (2012) mentions how beneficial it is that teachers could use technology to help facilitate student learning in ways such as storytelling, motivation, group discussion, drills, games, instruction, making a learning portfolio, and giving assessments.

Digital storytelling is one example of the types of teaching tools. There are at least three types of creations, which are digital picture books, animation storybooks, and background effects. Digital picture books, which teach, can be created by collected digital pictures, text and sound and then made as short video to help students read the story with greater comprehension. Animation storybooks can create computer-generated graphics to tell the story. Background effects such as pictures and sounds can interest students in reading. Lin (2012) also commented that technology is a very successful motivator in early childhood.

There are some effective ways that teachers can facilitate students' language learning such as using a Smart board, or using an iPad. First of all, Saltan and Arslan (2009) stated: "Interactive Whiteboards (IWBs) are touch-sensitive new generation boards controlled by a computer that is connected to a digital projector" (p.1). Saltan and Arslan (2009) mentioned that Interactive Whiteboards consist of four main parts: the computer, projector, software, and display screen. It allows teachers to include media in direct instruction, which

will motivate students to interact in the classroom.

The interactive white board, also known as a Smart Board, is now more common to use in early childhood instruction because it helps to enhance learning and teaching. Cuthell (2005) reported that changing the traditional white board to an interactive White Board encourages students to be more active in the classroom. Collaborative learning takes place among students as well as among teachers. Additionally, teachers and students are curious to discover the benefits of the use of interactive whiteboards in the classroom. It provides an opportunity for teachers to build a lesson and work among their peers, so teachers can create a new resource for using interactive whiteboards. Wong, Russo, and McDowall (December 01, 2012) said:

One of the most promising recent revolutions in educational technology is the interactive whiteboard (IWB), which uses a combination of a computer and data projector. IWB is the multi-touch, multiuser interactive learning board that groups of learners can work simultaneously on its surface and provide an interface allowing tactile, widely observable and collaborative interaction. (p. 1)

As a result, teachers prefer to use interactive whiteboards in their kindergarten classrooms because it encourages students to work in a group,

helps students make a connection between a virtual and real world and helps students to feel comfortable working with others.

All of the students in the experimental and nonintervention groups were given a test to assess their improvement in literacy. In order to choose students to participate, a large group of the students were pre-tested. All of the students chosen were classified as being at high risk for reading failure. The authors collected the data by using the National Curve Equivalency scores (NCEs) to compare the results that the authors found from experimental and nonintervention students. The authors found that the experimental students who participated in the Waterford program had greater improvement in literacy skills than the nonintervention students. Their scores on the tests were higher than the control groups'. Finally, the authors noted that the Waterford program is a perfect tool to apply in the kindergarten classroom to help students accomplish a high level of reading and writing skills. This program is intended to be an additional tool to help kindergarten students in literacy. Additionally, a study by Johanson, Bell, and Daytner (2008) revealed that technology has the ability to increase language development by improving beginning literacy skills.

Moreover, technology is an important tool for emergent children struggling to learn English as a second language. Burnett (2010) finds that technology provides special opportunities to support students with

developmental challenges. This includes children who are learning a new language or have a physical handicap. Furthermore, Yelland (2005) reported that technology serves the special needs student and encourages them to interact with confidence.

The difficulty of applying technology lies in how teachers learn about current technology and how to integrate it to help students succeed in the subject. One reason why it is hard for teachers is because they often must work overtime and spend their own money for training programs. In addition, the training programs are not always available, so finding appropriate workshops can be difficult. Yelland (2005) noted that locating age-appropriate software that educates as well as motivates can be difficult. High quality often carries a high cost. Also, teachers must be careful to choose safe Internet sites. Because of these reasons, teachers may not want to integrate technology in their classroom.

One of the challenges I will face when I apply my project in my country is to have a big enough budget to purchase a Smart Board and other hardware and software. Because it is a new idea, not all teachers will be receptive to using technology in their classroom. They need time to have training, so I will provide a workshop to demonstrate how to use the Smart Board and I will invite the teachers to attend to help open their minds to the possibilities of using technology in their classrooms.

Some teachers use digital educational tools for their own personal usage such as checking email, Facebook, or twitter accounts. Lin (2012) revealed that some teachers use computers in the classroom for personal convenience instead of using it to help students to learn. The most effective integration of technology in the classroom requires extensive planning by the teacher and the teacher must choose a theme to include as many subjects as possible.

A new challenge teachers will face is teaching literacy to young children who use technology frequently. These children often recognize digital prompts rather than using decoding skills. Levy (2009) created a study to determine how young children are influenced in reading skills by the frequent use of technology. The author wanted to know how the young children could read by using technology. In addition, the author used a term called Digital Literacy to describe the children who are learning to read through the use of technology. In this study, there were 12 children from the same primary school in East Anglia; six from Nursery (three girls and three boys) and six from Reception (three girls and three boys). The author chose the children who did not relocate during the school year, and who did not live far away from the school. The method used in this study was interviews. The author created an interview in order to observe the children's digital interaction. Also, the author interviewed their parents and teachers. The child observation took place in three parts: two in the school and

one at home. The first part at school was an interview using a puppet. The second part was observing the children in play at school, and the last part was parents observing children at home. Data was collected, transcribed and grouped by child using four different themes, which are digital literacy, reading computer text, responding to print on screen, and print reading and school discourse. The information collected identified patterns in the profiles in order to analyze “interview-based tools.” Different research activities took place in both the children’s home and school. Most of the data was collected from the children within the school setting. The author found that children could recognize the picture and some signs about a word instead of actually decoding it. Also, children have difficulty reading from a hard copy because they are more familiar with digital text. Burnett (2010) discovered that young children who interact with digital text are “being rather than becoming literate” (p. ).

#### Project Design:

In my country, Saudi Arabia, most children use technology just for play and fun but not for learning. Also, not all families can afford this for their children. Therefore, I find that applying technology in the school is a good way to ensure that all children will use technology and learn in a modern style.

My plan is to integrate technology in early childhood language instruction in Saudi Arabia. The educational system there is different than here in the United States. Here, kindergarten is the first step in elementary school, but there, kindergarten is grouped with preschool aged children in a separate school. The elementary school there begins with first grade. In Saudi Arabia, kindergarten in public schools is free only for children whose parents meet special qualifications. However, private schools have a different system. It is from kindergarten through 6<sup>th</sup> grade. Parents must pay for their children, and the price differs from school to school.

The school that I choose to teach in would be a private kindergarten, which would include students from K-6th grade. In fact, these students live in a high-income neighborhood, and they are all native Arabic language learners. My classroom will include 15 students, ages 6-7 years old, and there will be 7 boys and 8 girls. Additionally, students will have a basic knowledge about technology and they will already use touch devices at their home, such as iPads, iPad mini, or iPods. Also, the classroom will be accommodated by an interactive whiteboard with a laptop. It is important to have Wi-Fi or Internet connection in the classroom.

### Action Plan

Early childhood is the first stage where children can recognize the world around them. Most people think that young children need less instruction than adults especially with knowledge, but early childhood teachers need extra time to prepare for their lessons because they deal with an important group of students. Therefore, using technology with children at this age will support their curiosity and help them learn by discovering factual knowledge. Also, it makes the connection between what they play at home and what tool the teacher uses in the school.

In my country, most of the children use their touch devices to play games or watch YouTube videos. Since the children use the technology at home, the teacher can guide them to using technology from playing games to educational purposes.

I am going to apply technology in my early childhood literacy instruction to change the old style of teaching. Integrating technology in the classroom engages the students to learn in a more motivated classroom.

I use a Smart Board as an example of technology to integrate into my kindergarten classroom. Cuthell (2005) said that having an Interactive White Board in the kindergarten classroom reduces the amount of boredom and increases the classroom participation. Additionally, it builds cooperative

environment of learning because it lets students work together in the group.

Also, the teacher can use it to assess students learning by doing activities on the Interactive White Board.

The teacher-centered instructional method still has important value in my country, and most teachers prefer to use it because they think it is the best way to deliver the knowledge to the students. However, in learner-centered instruction, the students retain knowledge longer because in this way students are responsible for gathering information and understanding the subject well.

These days most parents are working and cannot give enough time at the home to teach their children. At the same time, they want their child to learn and be successful in school. By using technology in a kindergarten classroom, students will have a good resource to learn with at home.

Students will feel comfortable when they use technology in the school because it is a modern and interesting educational tool. It makes them happy because they will interact with each other instead of sitting and listening to the teacher's lecture.

#### *Unit Plan*

I plan for students to study about plants over a two-week period. My goal for teaching this unit is to help my students understand nature. This content is important because it help student to make a connection to the real world and

they can experienced that in the small trip with the school. Also, they will learn about process of seed how to be a plant that would open their mind that every plant comes from seed.

I have organized this unit of study around vocabulary, learning new words related to oak trees and seeds, with comprehension questions about the story of life cycle of oak trees and the story of seed secrets.

I will be a teacher for kindergarten students. In my country, Saudi Arabia we do not have curriculum standards, so I will adopt Washington State Standards to design my curriculum. My desire is to use technology in the early childhood language instruction to apply reading skills standards. In that way, I will ensure that all of my students are meeting instructional objectives by the end of the school year. Likewise, I would change my teaching method to help all students successfully learn. My instructional objectives for this unit are based on three domains of Bloom's Taxonomy, which are cognitive, affective, and psychomotor domains. In the cognitive domain, students will be able to understand at least five new words (grow, plant, equal, seed, observe), answer five comprehension questions with 80% accuracy, demonstrate the life cycle of oak trees, and demonstrate that seeds make plants. In the affective domain students will be able to make a story of the plant grow in a small group and recognize some of fruits that have seed. Finally, in the psychomotor domain

students will be able to draw oak trees using Smart Boards, color oak trees using Smart Boards, and collect some fruits or flower seeds and compare them.

I am using a daily plan for a 2-week unit that is all about plants. The first week is about the *Oak Trees* story. I start by teaching new vocabulary by using flash cards of the picture, word, and meaning of the word. The next day, students learn about the *Oak Trees* story by using a paper book and YouTube. The following day, I will teach the life cycle of oak trees by using PowerPoint and Smart Board. The next day students will learn about what plants need to grow. The last day in this week's unit, students will be ready to shape and color oak trees.

The second week is based on the *Seed Secrets* story. I start with teaching new vocabulary by using flash cards of a picture, the related word, and the meaning of the word. The next day, students will learn about the *Seed Secrets* story by using a paper book and YouTube. The following day, I will teach about how seeds travel by using PowerPoint and Smart Board. The next day, they would learn how to plant seeds. The last day in this week they would be ready to differentiate shape and size of seeds by using real fruits seeds. (See Appendix C of My instructional objectives for the unit, Lessons Plan, and Instructional strategies, activities, and procedures, approach to reach diversity).

### Assessment and Evaluation Plan

Tomlinson and Moon (2013) addressed the different levels of assessment that teachers can use. First, assessment of instruction is a formal summary of main contents of the teacher's lesson. It helps the teacher to evaluate the students' gain of knowledge. Secondly, assessment for instruction helps teachers to understand the students. It helps the teacher to shape her lesson plan based on her students' needs and interest. Lastly, assessment as instruction can be viewed like a circle between the teacher and students. By asking questions the teacher can explain more ideas and develop the student skills. In return, the students will let the teacher know what they have learned and what they have misunderstood. Tomlinson and Moon (2013) ended the article by explaining three stages of assessment. The first stage is pre-assessment, where the teacher prepares students for the lesson and enables them to brainstorm about the new lesson. The second stage is formative assessment, which the teacher uses during the lesson. The third stage is summative assessment, which the teacher will use at the end of the lesson.

### Reflections:

Education is very important in order to develop our selves, community, and country, to open our minds, and grow as a person, so we can have a good

future. Students have different learning styles and teachers should be careful and treat them according to their needs.

### Discussion

Every class has challenges for students because it has positive and negative aspects. One of my classes, called Perspectives of Early Childhood Education, was the most useful and enjoyable class that I have taken because I learned many helpful concepts about this important stage in life. After I took this class, I really had the benefit of understanding early childhood education.

I have learned that working with children from birth to age eight is not easy because they should have a good teacher who has a necessary background about early childhood education. In addition, that teacher must have the ability to work with them to help them to learn, communicate, and interact positively. Also, the teacher should have an awareness of how to make a good environment for the children because they spend a lot of time in it.

It gave me good information such as teacher skills, how to be an effective and successful teacher. That is necessary because any person who wants to be a professional teacher should know and understand this important information. It will help the future teachers to be successful in his/her job, and it will help students to have a professional teacher as well.

A current issue in education was also one of the most beneficial classes in my Master of Education program. The instructors' approach in applying presentations, discussions, working with groups, and reading a variety of articles is what enhanced the effectiveness of this class.

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#### Web Sites

[http://activities.macmillanmh.com/OralLanguageActivities/main1.php?activityI](http://activities.macmillanmh.com/OralLanguageActivities/main1.php?activityID=515)

[D=515](http://activities.macmillanmh.com/OralLanguageActivities/main1.php?activityID=515) -

<http://treasures.macmillanmh.com/california/teachers>