

The Literature Review Report

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Abstract

The following literature review is focused on how technology can be used in order to help students that are English language learners thrive in a classroom setting. This topic was chosen based off of an action research project of introducing a computer based program to ELL elementary students in order to help improve their language acquisitions. In order to thoroughly review this topic several articles were researched and their findings were thoroughly studied. Through this literature review the topics of technology based teaching tools, intervention techniques of ELL students, and how to combine those technology teaching tools with ELL students will be discussed. The major conclusions of this literature review will show that when technology based teaching tools are properly used they can be a valuable teaching aid for ELL students.

Keywords: English language learner (ELL), technology based teaching tool

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English language learners are present in virtually every classroom across America and their numbers are constantly increasing. Many of these students are dealing with a multitude of obstacles in the way of their learning. They may have come from a different country, therefore forcing them to deal with not only a language barrier but an entirely new set of social contexts as well (Lee, 2012). These children are then put into mainstream, English speaking, elementary school classrooms and expected to thrive. But that is just not possible. Without the proper teaching tools and intervention techniques these students' chances of success is constantly depleting. Meanwhile, there is an abundance of new and exciting technology based teaching tools constantly coming on to the market. While this could be viewed as a wonderful opportunity, unfortunately it is often viewed as overwhelming. How is the proper technology tool chosen? What makes it successful and how can they be used to help ELL students? These are the questions that will be addressed throughout this literature review. There is an abundance of technology based teaching tools currently out on the market and when properly implemented into a student's curriculum they can become invaluable teaching tools, providing ELL students a chance to thrive.

Who Are ELL Students

Students from immigrant families are a large and growing portion of the student population in U.S. schools across the country. In 2005, the U.S had near 11 million school-aged children of immigrants, which made them near one-fifth of the school age population (Lee, 2012). These students that are filling up classrooms are

dealing with a vast array of challenges, far more diverse than just a simple language barrier. These students are considered diverse in terms of their ethnicity, race, religion, language background, immigration status, and their social class (Lee, 2012). With all of these factors working against them this population of students has the most difficulty graduating from high school and the most difficulty reaching proficiency in their academics. These ELL students can now be found in a wider range of areas as well. In the past many ELL students were highly concentrated in urban areas but more recently settling in cities, suburbs, and rural areas across the entire country. As a result of this many ELL students are now landing in classrooms that are not accustomed to serving an ELL population (Theoharis & O'Toole, 2011).

Theoharis and O'Toole conducted their research in order to examine the leadership and teaching strategies that are necessary in order to create the best learning environment and the most socially just schools for ELL students (2011). The data collected by Theoharis and O'Toole (2011) showed that the drop out rate for ELL students is higher than any other student population, especially those students that were born in another country. In addition they predicted that by 2050 the ELL population will have more than doubled, which will mean that all teachers will be required and needed to teach the ELL population. Many educators are unaccustomed to working with this diverse group of learners and their families and many are simply unprepared to do so (2011). The research goes on to state that students that are categorized as ELL are often times been marginalized to access to the curriculum, achievement of the curriculum, and the student's social standing within their school. This students therefore have very few advocates that are

speaking up for them and making sure that they receive the necessary support that they deserve (Theoharis and O'Toole 2011).

An increase in ELL students has not only changed the dynamic of the classroom but it has also changed many of the policies and laws that dictate how these students should be taught. With the increase of minority students in U.S. schools there has been changes made to local, state, and national education policy (Clark, D et all 2012). The United Sate Congress passed the Elementary and Second Education Title VII Bilingual Education Act in 1968, which required schools to provide equal educational opportunities for English language learners. Ultimately this opened up the door for ELL students to have access to bilingual education when necessary (2012). Through these reforms different approaches to educating ELL students arose. One option that arose was an English-only immersion which places students in a “sheltered” classroom that teaches only English language skills for up to four hours a day. These students are taught skills such as reading, vocabulary, conversation skills, and writing. The other approach is traditional bilingual programs that have no time limit and tend to use the native home language as a tool to teaching English (2012). This approach of the “sheltered” English classroom is one that is still up for debate. According to Clark, D et all (2012) “the Working Group of ELL Policy concluded that the use of home language can promote students’ English language development and academic achievement...providing support in both English and Spanish increases the range of learners that engage in the curriculum.” In addition the research goes on to show that dual-channel models of memory and cognition allow information to be encoded and stored in both verbal

and written channels (2012). Therefore, it is clear that the best way for an ELL student to learn is to have access to their own native language as well as the English curriculum.

With all the changes in policy due to the influx of ELL students in new areas and the overwhelming presence of ELL students in many classrooms, many school sites and teachers are not equipped or properly trained in order to fully provide for ELL students. For an ELL student to thrive it is important to be aware of many aspects of their lives, not just the obvious language barrier. Lee (2012) conducted a study in order to research what the elements of a successful education program for ELL students would look like. The most successful ELL students were found to come from schools where there was a high rate of teacher collaboration and teachers were working together in order to foster an environment that builds on students' cultural and linguistic identities. It is also important, and widely accepted, in the education world that learning needs to be made authentic for these students. It is important to make curriculum relatable to the ELL community so that they can make their own personal connections to the material, making it easier to comprehend and retain.

English is a language that is spoken around the world. It is an overwhelming necessity for students to be able to not only speak English but to be able to fully understand it and grasp the entirety of the vocabulary that goes along with it. Jia, J et al (2012) conducted a study that focused on the vocabulary acquisition of English language learners. Jia states, "English has long been the international communication language in the world as well as the most important second

language in non-English speaking countries...vocabulary acquisition is the crucial element to learn English because it is the fundamental prerequisite" (Jia, J et al 2012). This vocabulary acquisition is crucial for all ELL students, no matter what their first language is. Grammar and vocabulary are the fundamentals of the language; therefore if the basic building blocks are not there then there is nothing to build on.

Vocabulary acquisition can be a tedious and tiresome task. The constant memorization and regurgitation of vocabulary words does not sound engaging for any learner. In Jia's study (2012) there is discussion of the troubles that teachers have in assessing a students' vocabulary acquisition. Often times students are required to memorize the new vocabulary at the beginning of each unit of study and then are allowed to explain the meaning of the words in their own native language. While this may seem to be a quality teaching strategy it could in fact be detrimental to the learner. Vocabulary acquisition is linked to a multitude of other aspects of language acquisition so to allow a student to merely memorize the word would not be beneficial (Jia, J et al 2012).

As it has been pointed out that the English language learner student cannot be expected to learn in the same manner as an English-speaking student. There is a whole set of unique challenges that ELL students face. So how can educators help them to succeed? With the advancements of technology and teaching strategies in our world there is an abundance of options that can be used. In the next portion of this literature review this options will be explored.

What Are Technology Based Teaching Tools

ELL students need additional resources in order to reach their full potential. It has been made clear that they cannot simply be placed into a mainstream classroom and be taught in the same manner as their English-speaking peers, and then be expected to perform at a passing level. But what additional tools can be used in order to help these ELL students? Technology based tools have been gradually making a larger appearance in schools across the country. Through research and study it is being discovered that these technology tools can offer an additional platform for ELL students to thrive. Hung and Huang (2010) found that e-portfolios could be a very useful technology tool for ELL students. Electronic portfolios, or e-portfolios, refer to multimedia environments where students can showcase their artifacts and their reflections (2010). When this technology tool was compared to the traditional paper and pencil method it was found that when using an e-portfolio format students were better able to collect, store and manage their work more efficiently. Students in Hung and Huang's study (2010) were asked to fill out attitude questionnaires and participate in interviews, in order to monitor their response to the technology based teaching tool. After the nineteen-week study was completed many of the students had a very positive response to the e-portfolio technology tool. One of the more intriguing results was that many students noted that it allowed for their speaking anxieties to be relieved. Through presenting in the e-portfolio they were able to present their knowledge and understanding without having to worry about the anxiety of having to speak in front of a crowd. This in turn would encourage more participation and student engagement (2010).

One of the many challenges that ELL students face in the school system is keeping up with the curriculum. In elementary and middle schools there is often the luxury of going at the pace of the student and using supplemental materials in their native language in order to help them succeed. When a student reaches high school this luxury is no longer an option. Clark, D et al (2012) examined what can be done to help these high school age ELL students in order to bridge the gap. They used the integration of a technology tool in order to assist their students in mastering the curriculum as well as the content language in the subject of science. Clark, D et al (2012) states, “our schools are generally not succeeding in producing students who are scientifically literate. This is usually the result of the way science is taught in schools, where curriculum is based on unconnected demonstrations and memorization of facts”. In order to explore what can be done to change this, an online science environment that utilized linguistic supports in both Spanish and English was implemented. These ELL students were learning about wolf ecology and population management in an online science inquiry environment (2012). The results of this study showed that ELL students learned and retained more scientific understanding about wolf population when they had access to the online bilingual tools (2012). Therefore this shows that with the integration of a technology tool gains can be made for English language learner students and they do in fact benefit from the added support and exposure.

Technology tool integration is a step in the right direction for ELL students, but there may be roadblocks along the way to that integration. As the literature has proven when technology is used as an additional teaching tool there is an increase

in progress and learning for ELL students. But what if ELL students can't access this technology? There are many school sites that don't have the access to technology that they should. Ganesh and Middleton (2006) conducted a study that looked at the integration of technology tools for a 2-3 combo class at an elementary school and the challenges that were encountered. One of the acknowledged problems was schools that serve at or below poverty level families usually have fewer resources. This can also be said for schools serving large ELL communities. Ganesh and Middleton state, "It is an unfortunate reality in the US that second language learners and poverty are closely associated...schools with ELLs can be sites of conflict and contradiction, sources of misrepresented identity, and places with misunderstanding between teachers and learners" (2006). They go on to state, "ethnicity, income level, reading achievement, and access to technology are all tightly interwoven...there is considerable evidence that second language learners generally have even less access to technology enriched instruction" (2006). From this statement it is clear that the students who have highest demand for these technology tools are not getting the access they need and deserve. There is also a direct link between the teachers that are responsible for implementing this technology and the fact that in many areas it is simply not getting done. Ganesh and Middleton state, "teachers frequently do not group ELLs with other students who might help them gain access to more coherent approaches available...furthermore given that teachers at high incidence ELL schools often are less qualified, these teachers may select software programs...that fail" (2006). This goes to show that

even if the technology is there and available it is just as important to know how to use it and to know which technology tools in particular need to be implemented.

The repercussions of ELL students not having access to the tools that they need are that they often are pushed to the side all together. Unfortunately these students can become what some may call lost causes and educators may tend to feel that their efforts are lost on these students. Goetze and Walker (2004) conducted a case study that examined a group of at risk readers. They defined at risk readers as the following, "At risk readers are those children who are in danger of not fulfilling academic learning potential. They are often perceived as less able, lacking discrete skills, and therefore at risk of reading failure...this perception of a deficit within children shapes the instruction they receive". This is exactly the cycle that needs to be stopped. Just because a student is deemed at risk does not mean that they should be given less meaningful tasks to complete. Goetze and Walker (2004) decided to create a before school book club that used technology as a tool to create meaning. The hope was to allow for a meaningful learning experience for a group of students who have otherwise been pushed to the side. The technology tool used in this particular case study was the use of sign systems, using the guiding question of; "does the use of multiple sign systems or representations help or hinder the literacy process of at risk readers?" (2004). These sign systems were used in order to better understand how at risk readers use signs to make meaning from text in unique ways. The data collection for this case study was the artifacts created by students such as inspiration maps and hyperstudio projects, collaborative conversations, and field notes. The results of this case study were positive. Overall it was found that the

project as a whole promoted intertextuality and helped the students to interconnect their ideas and make links to the books they were reading. In addition, it was found that these at risk students had been able to make meaning of somewhat complex themes within stories by using the technology tool of sign symbols (Goetze and Walker 2004). Goetze and Walker state, “with the focus on complex meaning making, these at risk readers were able to tie their responses to the books, creating intersexual understanding. Technology helped them do this.” (2004).

Bringing Technology Tools to ELL Students

Literature has made it clear that ELL students are more prominent in the classrooms of today than they have been in the past. The dynamic of classrooms is changing, children of immigrant families are flooding in, and more challenges are facing the students than every before. With this there is also an increase in technology tools available to educators and schools across the nation. The question is; how can these technology tools be implemented for ELL students so that they have the best chance at success? One study completed by John Paul Loucky (2010) created a road map of sorts for teachers to navigate the best sites and resources to teach their ELL students. Loucky’s goal was to “provide an overall menu of language learning and teaching websites, to help both students and teachers select more useful Computer Assisted Language Learning, or CALL” (Loucky 2004). Through this research it was found that the ideal system for an ELL should be one that can monitor progress and adjust the reading levels and sequencing of words needing to be learned. This ideal system should also repeat exposures in varying new ways until learned. One system suggested to do this was Moodle, which would allow

students to be tracked, archived, and assessed. Furthermore Loucky discusses the number of exposures that an ELL needs in order to have successful acquisition. The rate of retention after just one exposure is very low and studies have suggested that a recommended minimum of five to twelve exposures are needed to reach an understanding of new words (Loucky 2004). Additionally Loucky looked at what innovative language learner programs online need in order to be successful. It was concluded that these programs need to allow learners to access the supporting materials instantly (2004). The power of a student being able to instantly have the language support they need in order to understand the curriculum they are struggling with is priceless. In addition, through the use of technology tools the level of exposure needed in order to make an impact can be reached with more ease than a typical textbook and lecture approach.

A study conducted for elementary students in Taiwan created a tool that guides student learners when they become confused, allowing them to properly and efficiently use online and technology based learning tools (Huang, C et all 2010). For this study there was a control group and a test group each containing twenty-nine grade five students. A pre-test was given to both groups in order to determine whether or not had the skills and capabilities to participate; such as, able to send emails, manage files, and use the Internet browser. Both groups were then given a set of problems to solve. No learning assistance mechanisms were given to the control group and the test group were aided by learning assistance and prompted with timely and appropriate feedback and hints. The results of this study showed that those students who possessed the proper computer skills did benefit from the

learning assistance, however there was a large number of participants that did not seem to benefit (2010). Huang, C et al (2010) make a particularly poignant point in their conclusion of their study. It is stated, “the teacher observe that students in elementary school are typically impatient with text information...students are accustomed to accessing multimedia information...such that they lack skill in concentration and analyzing text information”. The students of today’s classrooms are advanced in technology access and processing information beyond what this study was providing them. They are accustomed to having instant access to whatever it is they are seeking, therefore the process of learning and receiving information needs to be updated to this level.

Many educators today are attempting to bridge this gap of the way things are being taught and the way that the students of today learn. However, if not done properly it has been seen that it can have an adverse effect. Prieto, L et al (2011) conducted a qualitative field study in five primary school classrooms. This field study was aimed at showing that the implementation alone of technology will not improve learning; it must be accompanied by the proper implementation and orchestration. Information and Communication Technologies (ICT) are being introduced increasingly in many classrooms, yet it has been seen that many teachers are implementing these ICT in ways that in fact lead to an under usage of technology or mimicry of uses of older technology (2011). The main conclusion of this case study is that the most effective way to implement ICT is to use a routine or a pattern. Out of all the teachers studied it was seen that those that stuck to a predictable routine had the most success. The researchers also believed that the use of these

routines would make the use of ICT more agile, allowing teachers to concentrate on other issues, such as social and motivational aspects of the activity (2011). One criticism of this study is that if the routine structure is used throughout than it may make the teaching style too rigid. Prieto, L et all (2011) counter this argument by explaining the routines provided in their case study should be used as possibilities, which can be taken as is or combined in new forms. This counter argument is an excellent example of how educators should approach using ICT, it is a tool that is necessary and that the students deserve, however use it to your best ability, taking bits and pieces of the guidelines that have been provided to you. Furthermore, in the conclusion of this study it is pointed out that there is an increasing presence of ICT in all areas of our daily lives and this change needs to be reflected in the learning experiences provided to students (2011). This point is one hundred percent factual and needs to be brought to the attention of educators everywhere. The way that students learn is rapidly changing, being constantly molded by the technology rich world around them, it is therefore up to educators to make the changes necessary and bring the tools to ELL and all students alike.

A pedagogical study completed by Lin J, et all (2012) focused on the best ways for technology to be integrated by educators. The use of information and communications technologies (ICTs) has been on the rise in the past three decades and has recently been brought up in regards to improving the effectiveness of teaching and learning (2012). Lin J, et all states, “more and more technologies, such as netbooks, interactive whiteboards, smart phones, and digital video recorders have become more affordable and available, coupled with rapid expansion of

computer networking...efforts in investigating in how teachers can use ICT to facilitate student learning continues” (2012). In order to observe the ways that ICT is being integrate, and to determine the most effective way, a case study was conducted. Three female Chinese language arts teachers were observed through classroom observations and frequent interviews. Each teacher was asked to make a plan for integrating ICT into their teaching and encouraged to reach the highest level of integration within a two-month period. The results of this case study showed that no matter what their previous ICT experience was, when properly instructed and shown how, the integration of technology tools can be done. Each teacher participating in the case study had a slightly different path in reaching the peak of ICT integration but nonetheless they all reached this point with success (Lin, J et al 2012). This case study goes to show that no matter what one’s background is as an educator adaptations and growth can occur. This growth as an educator is necessary in order to fully understand and access the full spectrum of useful technology tools that are available for all students, ELLs in particular.

Conclusion

Classrooms throughout the nation are home to ELL students. At first glance it may be difficult to pick them out of the crowd but upon further examination it would be clear. These are the students whom face the biggest challenges. These are the students whom have an uphill climb towards their goals from day one. These are the students whom need, and deserve, the aid and support of technology tools. Teachers may do their best to provide ELL students with the resources and information they need to learn, yet the fact of the matter is that this specific subset

of students need more than just what a teacher alone can provide. Throughout this literature review it has been made clear that ELL students are presented with a much larger range of challenges than the average classroom student. They are facing a multitude of new social and cultural challenges on top of their obvious language barrier challenge. This group of students is the least likely to graduate high school and the least likely to reach a proficient level in language and reading. Furthermore the literature has pointed out that this subset of students is now rapidly become the most common in schools nation wide, with an increase in immigrants larger than every before. This is why it is so crucial, more so now than every before, to provide ELL with the proper tools so that they have may have the greatest chance at success possible.

Finally, it has been shown that the technology tools are out there and there are proper and manageable ways to bring them to ELL. Whether it be the use of eportfolios to allow students more ease with presenting their ideas such as in the study conducted by Hung and Huang (2010) or an online bilingual tool to allow students to gain more knowledge of curriculum vocabulary such as in the study by Clark, D et all (2012), technology tools are out there and they need to be implemented. The cycle of pushing ELL students to the side or labeling them as lost causes needs to stop. In addition it needs to be recognized that the world that we live in is rapidly changing and technology is becoming the primary focus of our lives. Students, ELL or not, learn in ways much different than students of the past. This change in learning and technology tools available needs to be embraced and ELL

students need to be provided with the proper technology tools so that they may have the greatest chance of success.

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