

# A Study on Digital Literacy in the Classroom: Teachers' Attitudes towards Technology and the Subject Curriculum

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## **ABSTRACT:**

As technology and the digital world continue to expand and develop, there is an increasing expectation and demand for teachers to present technologically relevant content in their classrooms. Research has already explored the need for digital literacy in the classroom, in many cases the resources have been provided, and yet educators still struggle to integrate digital literacy in meaningful ways.

Digital literacy refers to an individual's ability to find, evaluate, and compose clear information through writing and other mediums on various digital platforms. Digital literacy overlaps with computer literacy, as most digital media technologies require some level of computer competency.

This study explains about the current literature and has also interviewed with current teachers about their successes and challenges in implementing digital literacy in their classrooms. The study involved two interviews, which yielded two unique sets of data, allowing the study to consider the polarizing views on this topic and what implications that has on the current use of technology in classrooms. Findings included examples of best practice, and concerns about improper use. Overall, the study suggested a balanced approach and the need for further education to improve teacher attitudes', comprehension, and comfort level.

**KEY WORDS:** Technology, Digital Literacy, Literacy, Subject Curriculum, Multiple Literacies, Elementary Education, Primary/Junior Education.

## **INTRODUCTION:**

Digital literature has become a regular part of our students' daily lives. For example, Wikipedia is a common form of digital literature, its meaning mediated and co created across the Internet by strangers. Regardless of its unreliability and tarnished reputation in academic circles, in practicality it is the first resource most people turn to when trying to quickly learn more about a topic. While I can copy and paste a page of text from the site to this paper, I am instantly losing some of its nature in the process. In the following paragraph alone, there are three hyperlinks – words that lead the user to other articles with specific information related to that word or phrase. Once taken out of

context, however, those hyperlinks lose their meaning. They do not translate to traditional literacy.

### **According to Wikipedia;**

Electronic literature, otherwise known as Digital Literature, is a literary genre consisting of works of literature that originate within digital environments and require digital computation to be read. In contrast to most e-books, electronic literature is created specifically to be used via a digital setting and thus cannot be printed as key elements of the text require computation: for instance there may be links, generative aspects, multimedia content, animation or reader interaction in addition to the verbal text. Electronic literature may also take the form of digitally mediated performance writing. (“Electronic literature”, 2004, para. 1)

Knowing how to navigate this information, and how to assess it for truthfulness, is just one of the ways in which digital literacy is important to our students. It is also just one form of digital literacy that students engage with almost every day. Blogs, social media sites, and video games are all examples of digital literature that has become part of the regular world around us all, students and teachers alike. Each of these examples of digital literature comes with its own paradigms. Students need to explore new forms of knowledge and literacy to be able to engage with the language of this digital world. However, digital literature also intersects and coexists with traditional literacies and language curriculum. The two do not each exist in parallel vacuums of meaning making. Instead, they can inform upon and support one another. Current curriculum and practice stress bending digital resources to teach traditional pen and paper literacies, which does not reflect the skills students will need when they emerge into digitally rich worlds. Instead, I intend to explore how digital literacies can be integrated into elementary language classrooms as a regular and important tool for both teachers and students

### **PURPOSE OF THE STUDY:**

The main aim of this study is to examine the challenges facing the integration of digital literacies in elementary classrooms and identify how teachers and students can benefit from the widespread implementation of digital literacies in the classroom. Many studies have looked at the importance of digital literacies to our students; for example, – how digital literacy can promote traditional language learning (Segers & Verhoeven, 2002) or the need to acknowledge emerging literacies (Wohlwend, 2010). I intend to study the practical application of these concepts, and how digital literacy can be fully integrated into language classes.

This research will help teachers embrace digital literacies in their classrooms, to effectively engage students within the language curriculum, and promote higher learning and development. Day and Kroon (2010) have shown that students find digital literacy programs in their classroom fun, engaging, and academically beneficial. It has been suggested, however, that teacher anxieties about the practicalities of a digital rich language curriculum often prevent the kind of exploration and experimentation this area could benefit from (Cviko, et al. 2012). I hope that some of the ideas put forward in this study will inspire teachers to enact a more extensive digital literacy language program in their class, by expanding on what other teachers have practised in their own experiences with digital literacy.

Another drawback to digital literacies in the classroom has been policy and curriculum. Due to the fast growth and fluid nature of digital literacies in our culture and our classrooms, policy has had trouble keeping up with practice. In this study, I will attempt to outline the major barriers teachers face with regards to policy and curriculum, and then suggest how these gaps may begin to be bridged.

### **RESEARCH QUESTIONS:**

The main question leading this study is how can teachers use digital literacies in elementary classrooms to promote language learning?

I will consider the following sub questions to help focus my research:

1. What are teachers' attitudes towards the importance of digital literacy in their elementary classroom?
2. What resources and strategies can help teachers overcome barriers when introducing technology and digital literacies to their classroom?
3. Finally, how can teachers ensure that technology is incorporated in meaningful ways?

I will be basing my research in a qualitative case study approach. Participants will engage in interviews to express their experiences engaging with digital literacies in education. While designing my questions and conducting my interviews I will engage in the practices set forth by previous studies (Barter & Jack, 2008; Creswell, 2006) which introduce the appropriate methods for recording and analyzing data gathered through interviews. I will follow previous research which sets up guidelines to ensure reliability and reduce bias in qualitative research (Mays & Pope, 1995).

## **OVERVIEW:**

The current research study talks about introduction to the research and later an overview of current literature regarding digital literacies in education is presented. Further will be an overview of the methods, procedures, contributors, and instruments used throughout the research. Furthermore a closer look at contributors and the data gathered during the interview process. Finally this paper will explore limitations, draw any conclusions and recommendations, and suggest further avenues for study.

## **LITERATURE REVIEW:**

This research will help to support the idea that technology is a necessary part of our students' future success, and that it is our role as educators to find meaningful ways to incorporate multiple literacies into our classrooms. Successful technology use is both exciting and integrated (Clarke, 2014) and relies on the active participation and guidance of a teacher to scaffold learning (Yin Hsu & Wang, 2010). We cannot just sit students in front of computers or mobile devices and expect learning to happen. This literature review seeks to outline some of the current strategies, successes, and challenges of digitally rich classrooms. By looking at the commonalities and differences drawn from a review of twenty studies regarding digital literacies and technology in education, the following relevant themes emerge: digital natives, multiple literacies, mindset and proper use, curriculum and policy, and programs and technology.

Teaching with digital literacy and technology is inherently student based – we are moving the axis of control and inquiry to them, which in turn tends to make teachers uncomfortable. We are moving away from an I-R-E (initiate – respond – evaluate) discourse in which the teacher initiates discourse and leaves the student to respond and in turn be evaluated (Grisham & Wolsey, 2006). In many cases this also asks teachers to move out of their comfort zone, which speaks to a lack in pre-service training and support (Cviko, et al., 2011). However we cannot wait for the resources to come to us; in many cases we must make an effort to educate ourselves on the available options and current research. Frequently, a lack of “technology knowledge and skills, technology-supported pedagogical knowledge and skills, and technology-related-classroom management knowledge and skills has been identified as a major barrier to technology integration.” (Hew & Brush, 2006, p.227).

Should a teacher elect to educate themselves and face the numerous barriers between their students and a digitally rich classroom, they must navigate the existing literature to find meaningful uses for technology in their classroom. Though increasingly less common, there are still strategies which simply seek to support pen and paper literacies with technology – for example a study which suggests using technology to support student engagement with books at the start and end of the year, which it claims are the hardest time of year for teachers (Saine, et al., 2012). In their study they rely on

technology for its motivating properties alone, ignoring the possibilities of addressing multiple literacies in their lessons. They also fail to recognize that successful technology integration in the classroom is regular and year wide, not just to be saved for special occasions.

Outdated policies and curriculum expectations are often listed as two of the major barriers to meaningful technological integration in the classroom. Regardless of the wealth of research over the past decade, much of which indicates the importance of technology to our students, educational policy makers have neglected to enact changes which would support a technologically rich pedagogy. The lack of support for teachers stems from policies that prioritize traditional literacies and make little room for adequate technological resources (Kinzer, 2010). Hew and Bush (2006) conducted a review of 48 peer-reviewed studies and found that resources made up 40% of the barriers mentioned, with the next closest barrier being knowledge/skills at 23% (p. 226). They organized resources into three main categories – technology, access to technology, time, and technical support (Hew & Bush, 2006, p. 226 – 227). Not only do we need policies which support provisions for technology, but which also recognize the importance of access to these technologies for all subjects, provides teachers with planning time and resources, and keeps said technology in good repair. This was supported by the research of Kervin, Verenikina, Jones and Beath (2013) who found the same institutional barriers in their survey of 213 Australian educators.

Assuming that a teacher has the resources and the desire to incorporate digital literacies in their classroom, we need policies that support their learning and exploration so that they feel comfortable using the tools available to them. Here Kinzer (2010) suggests making “more funding available to document effective practices related to technology teaching and learning in language arts, and to support pre-service and in service education about digital literacies and teaching in collaborative digital media.” (p. 56). This would help address the oft-cited barrier of lack of knowledge or training on behalf of teachers (Hew & Bush, 2006; Kervin, et al., 2013; Cviko, et al., 2011; Grisham & Wolsey, 2006; Hicks & Turner, 2013).

Digital literature circles have also been proven to encourage discussion and interaction amongst peers and between students and their teacher (Day & Kroon, 2014). These operate within online forums, which allows students to direct the conversation, get involved both at school and at home, work at their own pace, and reduces some of the anxiety involved in face to face discussion. However they are also proven to be more effective when combined with face to face circles (Day & Kroon, 2014). Online affinity spaces (such as wikis, fan based forums, etc.) also act as a way to encourage students to get involved in discussions and write about their interests (Curwood, 2013).

Video games have also been shown to encourage skills related to encoding and decoding meaning, support creativity and self-expression, and impact identity development (Wohlwend, 2010). When they are playing games some skills students develop include spatial skills, problem solving, and strategy (Hsu & Wang, 2010).



However this requires careful selection on behalf of the educator, who must also inquire if the game involved is somehow better at developing certain skills or ideas than other methods. Possibly more beneficial is the use of gaming as a platform for creation and the creative expression of ideas (Hsu & Wang, 2010). Used properly, certain games or game crafting programs act as an alternate way to teach students about the various elements of storytelling such as narrative or character development, and may be a way to involve reluctant writers. Electronic books with or without interactive elements help support traditional literacy as well as the acquisition of new skills related to multiple literacies (such as the function of hyperlinks) (Smith, 2001).

### **CASE STUDY-A:**

Participant A has been teaching for 10 years. Nine years was spent in kindergarten and the current year is in grade 5. He has attended courses on Smart-boards, Promethean boards, and iPad apps to help incorporate media and literacy. His school board offered all of these courses. Participant A is also a part of his schools 21st Century Learning Committee. His current classroom is located in a portable, which means he has little access to technology, and no Internet access. His classroom has a projector and a computer. Participant A did not receive any pre-service training related to technology when completing his teaching degree a little over 10 years prior.

When asked about the students at his current school, Participant A described most of them as having regular access to technology and the Internet at home. Most have a tablet or smartphone (or both) as well as a computer at home. The surrounding community and families also do regular fundraising and sponsorship events to help ensure access to the latest technologies within the school (supplementing any budget provided by the school board).

When discussing how technology is best used in the classroom, Participant A outlined a student and curriculum driven integration that always keeps the learning goals in mind. This aligned with the research by Clarke (2014) regarding the importance of keeping the learning goals foremost when designing lessons, which integrate new technologies. Participant A warned that “some of the older teachers, they really gotta pick it up or they’re going to fall behind” and cited examples of teachers using technology just to watch movies or play games. He also suggested that working in a school with a great deal of access to technology and programming informed his teaching decisions. Participant A also recognized the challenge to teachers who lacked experiences with or understanding of the technologies available, calling the idea “daunting”. He suggested, “Some teachers have blogs and are doing wonderful things but to someone who is completely out of it and used to overheads and chalkboards it’s a little bit intimidating.”

In response to this he suggested small, manageable steps towards integration, and taking the initiative as a teacher to self-educate and find peers within faculty you can learn from.

### **CASE STUDY - B:**

Participant B has been teaching for 13 years. In that time, he taught 8 years of kindergarten, 5 years of which was special education. The remainder was spent teaching the homeschool program, grades 4, 5 and 6. He is currently teaching kindergarten. Prior to teaching Participant B took courses in computer programming in his undergraduate studies, took computer modelling courses, and has spent time working in IT and large scale networking. He also received training on technology integration with regards to literacy when completing his library AQ. He completed a Master's degree at the University of Toronto studying institution behaviour and moral development.

Participant B describes his students as coming from very well off homes with highly educated parents who are actively involved in their young children's educations. Students have liberal access to smartphones, tablets, and computers. His current classroom has laptops, a Smart-board, and an iPad.

When asked where digital literacy might give students and educators an advantage over traditional literacy Participant B suggested it makes content a little easier to deliver, and can help provide affordable resources (such as levelled readers). He also recognized that it can help struggling or reluctant readers, "especially bright visually oriented boys". Contrasting this, he believed traditional literacy has a strong advantage over digital literacy in some very big (but hard to define) ways. He stressed traditional literacy is "definitely, absolutely, 100 percent" better for comprehension, going on to state "the printed word is the only thing that conveys, like, the depth and breadth of the human experience and conveys it in a way that profoundly resonates with people."

Participant B said his own practice is led by his students and what they are interested in and respond well to. Within his class, technology is only used when he is present, in the context of a lesson or learning activity. The Smart-board and other technologies are not used for games, as a reward system, or during free time.

It is worth noting how Participant B's critical view of technology in the classroom may be reflected in the quantity and quality of his integration of technology and digital literacy, which reflects the research showing that teacher attitude has a substantial impact on the use of multiple literacies in the classroom (Grisham & Wolsey, 2006).

Participant B expressed some frustration that "there is no policy or parental or administrative constraints or encouragement". At one point a program he was seeing a lot of success with, but which was rather expensive, was cut by his principle due to what he called "school politics". He also warned against educators being led too directly by the curriculum, suggesting, "We're a lot more than curriculum delivery specialists, we're

educators. You have to think of it from the perspective, how does this help my student become a, not only academically but intellectually, morally considerate individual, as opposed to just someone who can, you know, navigate a computer.” This aligns with the findings of Borsheim, Merritt and Reed (2008) who saw that curriculum (which in their view clung to the past) has a great deal of influence on teacher mindset. Participant B also worried about the trend in educational policy to adapt and take for granted parts of Daily reality which are not fully understood or whose ramifications have not been completely explored. He called for more “critical literacy” and more oversight when it comes to technology in classrooms.

### **IMPLICATIONS OF THE STUDY:**

Regardless of the support in the literature, the access to resources, and the encouragement of school boards, teachers are still the final word when it comes to meaningful integration of digital literacy and can embrace or ignore it accordingly. While it is importance to respect the agency of a teacher in their classroom, it is also important to recognize the potential loss to a students’ education. We need to balance this respect for teacher authority with the documented need for digital literacies. This may require more aggressive board training and regulation, and clearer instruction within the curriculum.

Behind this, we find that teachers’ attitudes towards digital literacy are rooted in their understanding of the term, which like the modern world it comes from is constantly fluctuating and evolving. Even in the literature, the term has a shifting and multi-faceted definition, complicated by the wealth of interchangeable and interrelated terms that accompany it (such as multiple literacies, multi-literacy, electronic literature, etc.). If teachers do not understand the term, then we cannot expect them to understand its potential, or to implement digital literacies in meaningful ways.

### **CONCLUSIONS:**

Definitions and concepts of literature and literacy have as a necessity become fluid and permeable to encompass the wealth of multi-literacies now represented in our digitally rich culture. As Kinzer (2010) wrote, literacy now involves more than “encoding and decoding alphabetic/linguistic elements” (p. 52). Numerous studies have proven the importance of providing a digitally rich and meaningful language education to our students, to promote their future engagement in society. The question this study sought to understand was why are we still struggling to find multi-literacies and technology in our classrooms?

In response to this, the study has shown that there is still a great deal of work required to change teacher perceptions and understandings of the importance and potential of digital literacies in the language classroom. While school boards have increasingly offered technological resources and provided in-service trainings, all of



these resources remain optional, and a shift in teacher mentality is required to motivate educators to use the resources available to them. This requires clarifying teacher understandings of digital literacy, making available strategies that intertwine digital and traditional literacies and developing changes to both curriculum and policies that clarify the importance of digital literacy to our students and eliminates the ability for educators to avoid or ignore technology in their classroom.

### **AREAS FOR FURTHER RESEARCH:**

- A more thorough study of the attitudes of educators in Ontario towards digital literacy and technology in the classroom.
  - Investigate the impact of the Language curriculum on educator's inclusion or exclusion of digital literacy in their classroom.
  - An analysis of the impact or influence of pre-service education on teachers' attitudes towards and familiarity with digital literacy
  - \_Compare the access and attitudes of teachers in diverse socio economic areas to digital literacy and technology in their classroom.

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