A critical analysis of technology's impact on teacher's views of literacy learning and teaching: A continuum of understandings

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Abstract

The purpose of this study was to investigate three middle school English teachers'
understandings of literacy and technology. In particular, how do they view literacy and
technology learning and teaching, and how do they use (or not use) technology to enact their
views of literacy in their classrooms. This narrative inquiry qualitative study consisted of three
open-ended interviews, written literacy narratives, and multiple classroom observations with
each participant as well as the collection of various teacher documents, such as lesson plans,
presentation notes, rubrics, and student handouts. Narrative methods were used in the data
analysis. Findings were organized across a continuum of literacy understandings from traditional
understandings to new conceptions of literacy. Discussion and implications point to the need for
an expanded definition of literacy with teachers that addresses the complexity of multiliteracies.
There is also a need for extending pedagogical repertoires of teachers to recognize TPACK as a
beginning to multiliteracies.

Keywords: Multiliteracies, Technology, TPACK

Introduction

Technology integration is commonplace in today's school contexts as more and more schools are moving to 1:1 implementation and online learning platforms. This presents unique challenges for different content areas, particularly literacy, as teachers and administrators sometimes do not know whether to focus on literacy, technology, or the interplay between the two. As technology is increasingly integrated, literacy is often left out of the discussion when considering how new technologies impact teaching and learning. This is especially problematic when literacy teachers possess traditional conceptions of literacy, and the affordances of technology do not necessarily support what they think they should be teaching and students should be learning.

What is missing in conversations and discussions is showing how technology can align with curricular goals and not using technology for technology's sake. Staples, Pugach & Himes (2005) noted, "The initial discussion of technology makes sense only insofar as it is directly related to the curriculum and is not focused on the acquisition of technology resources – either hardware or software" (p. 302). These discussions of curricular goals help address the relationship between technology and literacy content while aligning with standards, goals, means, and outcomes (Hew & Brush, 2007). Technology, then, is more of a curricular tool and not something that is to replace textbooks, other print-based texts, reading, and writing. It is important to move beyond simply focusing on technology and literacy, and instead expand both understandings and applications of literacy to literacies or multiliteracies, as espoused by New London Group (1996), who view literacy as continuous, new, supplemental, and enhancing or modifying established literacy teaching and learning rather than replacing traditional practices

(Rowsell, Kosnik & Beck, 2008) and relate specifically to the types of literacies students interact with on a daily basis.

While studies have found that literacy teachers believe technology should be integrated into curriculum and instruction (McGrail, 2006; Hutchison & Reinking 2011; Ruday, Conradi, Heny, Lovette, 2013), much still needs to be learned about teachers' beliefs and knowledge of the best ways to integrate technology into the curriculum (McGrail, 2006; Ruday et. al, 2013). In particular, researchers need to turn to teachers to figure out how technology is impacting new conceptions of literacy and the conflicts inherent in this process (McGrail, 2006) as teachers are experimenting with connecting technology to student learning.

Literature Review

Multiliteracies

Multiliteracies recognizes both the increasing cultural and linguistic diversity in the new globalized society as well as the new text forms from multiple communicative technologies (New London Group, 1996). Literacy, then, "is more than reading, writing, speaking, listening, and viewing as traditionally defined. It is more useful to think of literacies, which are social practices that transcend individual modes of communication" (NCTE, 2018, n.p.). Therefore, educators have the responsibility to adjust their classroom practice to prepare students to become "active and successful participants in the 21st century globalized society" (NCTE, 2013, n.p.) by becoming proficient with different technological tools. This proficiency includes managing, analyzing, and synthesizing numerous types of continuous information.

Despite the recognition of technology's role in multiliteracies adoption, implementation into the classroom has often been met with resistance. This ranges from a skeptical viewpoint,

requiring technology to prove its usefulness before integration, to a neutral viewpoint, where technology could be good but not necessarily connected to prime aspects of literacy, to a transformational view in which technology redefines literacy (Bruce, 1997; Labbo & Reinking, 1999; Swenson, Young, McGrail, Rozema & Whitin, 2006). Furthermore, Bruce (1997) argues that these views often place technology and literacy into two distinct realms that do not overlap or integrate. Labbo & Reinking (1999) and Walsh (2010) echo this sentiment in that educators have far too long thought of technology in terms of its technological aspects and less of what it means for different areas of literacy, particularly how technology transforms literacy practices. Thus, a different understanding of technology's role in literacy is needed, one that is more dynamic and multifaceted, where literacy is expressed through its technology rather than determined by it (Bruce, 1997) and "participation in *shaping* literacies becomes even more important than *acquiring* literacies" (Bloome & Enciso, 2006, p. 302, emphasis in original). Literacy and technology, then, act in conjunction with each other through socially constructed practices (Myers, 2006) that require new beliefs and new goals for the new digital multiliteracies.

If technology and literacy continually shape each other, and if educators are going to be truly equipped to prepare students to be active and productive participants in the evolving nature of literacy, not only do they need a multifaceted framework that reflects an integrated nature of knowledge, they also need an expanded view of literacy that includes multiple realities (Labbo & Reinking, 1999; Walsh, 2010). They need a pedagogy that ultimately supports the transformation of both practice and literacy understanding. The multiliteracies pedagogy provides a flexible and critical framework by which educators can prepare students.

Multiliteracies pedagogy initially recognized the complex integration of four factors: situated practice, overt instruction, critical framing, and transformed practice (New London Group, 1996). Situated practice is "constituted by immersion in meaningful practices within a community of learners" (p. 33). This idea echoes the contextual nature of schools where technology will not work for every student in every situation or for every subject. Overt instruction allows teachers to scaffold learning activities to allow learners "to gain explicit information at times when it can most usefully organize and guide practice, building on and recruiting what the learner already knows and has accomplished" (p. 33). This similarly reflects the necessary technological knowledge teachers will need to pass along to students in topic-specific or subject-specific activities (Cox & Graham, 2009).

In critical framing, learners constructively critique what they have learned to extend and apply it to new and relevant innovations. Just as teachers need to be aware of the affordances and constraints of technology and what this means for student learning, teachers can also extend critical framing to ethical and social issues related to technological capabilities. The goal is ultimately transformed practice where "students can demonstrate how they can design and carry out, in a reflective manner, new practices embedded in their own goals and values" (New London Group, 1996, p. 35). Transformation takes place when students re-create knowledge and understanding suited to their own purposes:

> Teachers who are committed to a multiliteracies pedagogy offer their students ample
> opportunities to access, evaluate, search, sort, gather, and read information from a variety
> of multimedia and multimodal sources and invite students to collaborate in real and

virtual spaces to produce and publish multimedia and multimodal texts for a variety of

audiences and purposes (Borsheim, Merritt, & Reed, 2008, p. 87).

Building upon the New London Group's (1996) multiliteracies pedagogy, Cope and

Kalantzis (2009) reimagined the pedagogy as knowledge processes and pedagogical acts to help

extend literacy teaching and learning. Students and learners are at the center of these knowledge

processes and pedagogical acts as traditional notions of literacy (reading and writing) are

included and subsequently woven together with out-of-school literacies, with learners being

active agents in the process. There is no map to follow; rather this type of pedagogy allows for

alternate starting points for learning, forms of engagement, divergent learning orientations, and

different modalities in meaning making (Cope & Kalantzis, 2009).

Technological pedagogical and content knowledge

To use technology effectively as indicated in the previous examples, teachers must

possess specific knowledge about technology and how it can be used effectively in different

content areas and instructional practices. Technological pedagogical and content knowledge

(TPACK) (Mishra & Koehler, 2006; Koehler & Mishra, 2009) is built off Shulman's (1986) idea

of pedagogical content knowledge, which integrates pedagogy and content. With the

advancement of technology's role in education, a new understanding is needed that reflects how

technology has changed or has the capacity to change classrooms. Teachers must learn the tools

and also the techniques and skills needed to meaningfully and purposefully use technology to

support learning. Technology is not static, which requires evolving thinking and knowledge.

Quality teaching includes technology, pedagogy, and content and does not isolate them from

each other. The TPACK framework can especially be utilized in situations where new

technologies are constantly being introduced.

Currently, technology is not seen as transformative but rather as an aid or extension tool,

and much of the lack of change in practice is dependent on the content area. Technology also has

its own affordances and constraints and deciphering among these can be difficult, especially as

teachers and teacher educators contemplate how, when, why, and to what extent to integrate

technology into classrooms (Koehler & Mishra (2009). TPACK, then, helps clear up the

messiness of meaningful technological integration into the classroom by giving teachers a clear

and concise focus in their classrooms.

TPACK is flexible and does not prescribe a certain approach in its development, as "there

is no single technological solution that will function equally well for every teacher, every course,

or every pedagogical approach" (Harris, Mishra & Koehler, 2009). In addition, technology for

technology's sake is not the main focus. A "content-neutral emphasis on generic software tools

assumes that knowing a technology automatically leads to good teaching with technology"

(Mishra & Koehler, 2006, p. 1031). With this in mind, "*integration efforts should be creatively*

designed or structured for specific subject matter ideas in specific classroom contexts" (Koehler

& Mishra, 2009, p. 62, emphasis in original). TPACK can be used across content areas according

to specific goals, means, and outcomes.

TPACK is more focused on technology and how the teacher uses it to reach instructional

goals, but is less concerned with the social and contextual nature of technology (Jacobs, 2013).

The focus for this study includes elements of TPACK but is mainly focused on the broader

picture of multiliteracies that "acknowledge the productive power of individuals as they engage

in multimodal texts regardless of the technology required for that engagement" (p. 102).

Multiliteracies also includes teachers' knowledge of the interplay between literacy and

technology and how their practice supports learning within the larger multiliterate world.

Methodology

The teachers in this study possess unique backgrounds and lived experiences which

contribute to their complex knowledge of literacy, technology, and teaching practice. In order to

characterize "the phenomena of human experience and its study" (Connelly & Clandinin, 1990,

p. 2) as well as "make visible the puzzles of the mind – framing, evidence, stances, theories, and

questions" (Schaafsma & Vinz, 2011, p. 8), narrative inquiry was used as a means to access

teacher knowledge to answer the following research questions:

1. How do practicing English teachers view technology and literacy?

2. How do practicing teachers use (and not use) technology to support their
    understanding and enactment of literacy in their classrooms?

This study used purposive sampling to focus on a school, College Prep Academy (all

names are pseudonyms) that has transitioned to a 1:1 technological environment where every

high school student had a laptop and every middle school student had an iPad. College Prep

Academy is a $6^{th} – 12^{th}$ grade private religious school in a suburban Western location of the

United States. At the time of the study, the student body was approximately 1,300 students with

600 in the middle school and 700 in the high school. The student body is primarily Caucasian

from a mid to upper socioeconomic status. College Prep Academy has integrated technology into

all subject areas and implemented extensive professional development with its teachers to be

prepared to use technology in the classroom. The context of the school and the participants may

not necessarily be typical of other private or public high schools. Although this is a unique

school setting, this study may provide rich insights into other schools that experienced the same

phenomena with literacy and technology and are struggling to make sense of how to

meaningfully and purposefully adjust to the 21st century and its expectations for literacy

education.

This study used homogenous sampling (Huberman & Miles, 2002) to identify practicing

middle school English teachers who have used or not used technology to support their

understanding of literacy in their classrooms and teaching practice. The homogenous sampling

allowed for the topics of literacy and technology to be focused on exclusively and studied in-

depth. The practicing teacher participants for the study were middle school English teachers

who have undergone similar professional development, have had similar interactions with

teachers and students in regards to the technology, and teach towards the same objectives and

curriculum in regards to the implementation of technology in the classroom. The study focused

on three middle school English teachers. At the time of the study, Maggie was in her 27th year of

teaching, all of which have been at College Prep Academy. Maggie holds a master's degree in

English education and taught three sections of the 7th grade advanced English classes. Lindsay

graduated in 2005 and has spent her entire teaching career at College Prep Academy. She has

taught mainly 7th and 8th grade English, both advanced and regular. Lindsay recently completed a

master's degree in psychology with an emphasis in child and adolescent development. Rick was

in his sixth year of teaching, all of them at College Prep Academy. He taught three sections of

advanced 8th grade English, one section of regular 8th grade English, a middle school journalism

class, and a middle school speech class. Rick has a degree in middle level/secondary education

with an English Language Arts field endorsement. He was currently half way through earning his

master's in curriculum and instruction with an emphasis on technology.

Data from the participants consisted of teacher literacy narratives, three open-ended

interviews (Seidman, 2006), observations, and the collection of curriculum materials. The first

interview focused on life history and past experiences in order to place the participants'

experiences in context. The second interview focused on concrete details of participants' present

lived experiences and occurred after three observations of each teacher's classroom. Finally, the

third interview occurred towards the end of the school year in order to allow the participants to

reflect on the meaning of the experience (Seidman, 2006). The third interview served as a

member check and validation of the initial analysis of the data in order to clarify and solidify

each teacher's knowledge of literacy and technology.

Detailed field notes of curriculum presented, teacher interactions with students, the

classroom layout and design, the teacher's instruction, and other features of normal classroom

practice were collected during classroom observations. Any teacher materials and curriculum

used in the observed lessons were collected from each teacher. These materials included lesson

plans, unit plans, student handouts, instructional examples and content, lecture notes and/or

multimedia presentations.

The interviews, classroom observations, teacher literacy narratives, and teacher-created

curricular materials served as multiple data points for analysis. Data was reduced into

manageable and meaningful segments (Corban & Strauss, 2008, Creswell, 2013) by initially

analyzing the data focusing on technology and literacy and technology and literacy instruction

and practice. These topics were framed through the narrative inquiry space of interaction,

continuity, and situation (Clandinin & Connelly, 2000). Analyzing data through the narrative

inquiry space helped delineate among the temporal nature of stories and experiences, the need

for balance between personal and social factors, and the influence of setting and context on

experiences.

Findings

When considering Lindsay, Maggie, and Rick's literacy understandings in light of the

research questions, the findings can be organized across a continuum. On one end, there are

traditional understandings of literacy and technology and their role in classroom instruction. In

the middle are more emerging and progressive understandings of literacy and technology where

traditional ideas are still present but new understandings have developed. Finally, on the other

end are new conceptualizations of literacy and technology and their role in the classroom.

Lindsay can be categorized in the traditional understandings end of the continuum, Maggie can

be classified in emerging understandings, and Rick can be categorized in new conceptualizations

end of the continuum.

Traditional conceptions

Key to Lindsay's understanding of literacy is the concept of communication focusing

specifically on reading and writing: "What do books communicate to their readers? How do

people communicate in different ways via writing?" Lindsay sees literacy being connected

"through stories and written communication" as a way to "bring feelings of self-worth and

belonging." She also recognizes that communication has many different purposes for both her

and her students:

> You can't communicate in a professional way with your boss if you don't know how. The
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> way I communicate with my friends is different from the way I communicate with my
>
> students. They all have value, but it's going to be different… If I am writing a short story
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> or a narrative, it's going to be different than if I am writing a paper for my master's class.
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> I just think knowing when to do that and when to separate into those categories is so
>
> important and crucial for kids for that communication.

For Lindsay, literacy will always be closely associated with communication, reading, and

writing.

Lindsay holds a fairly traditional view of the interplay between technology for both

learning and teaching. Lindsay primarily sees students interacting with their computers and there

is "very minimal interaction and communication with your teacher, and I feel like that's starting

to clash and I don't think I'm going to be okay with that." Lindsay wants her students to use

technology to "learn something and not just produce something….but from what I'm hearing

technology is supposed to be and what I am seeing they are using. technology for, that's not the

same."

Lindsay described technology's impact upon student learning as "conveniences": "I like

that they can type up their essays and I like that they have research and things at their fingertips

that they can go to." She thinks technology helps her students if they get "stuck" when they are

writing as they can "click on and find some different words…and it's handy." Lindsay does

recognize, though, that students are better able to research any topic, find examples, and then

utilize the technology for better presentations: "When the kids do presentations, they put these

things together with the technology. The things they can do are amazing because of all the

different [technological capabilities]." When her students find their information, organize it, and

put it into some kind of presentation, "the visual, the auditory, and the written compounded

together is going to [help them] remember more." Despite this burgeoning understanding of how

technology may positively impact student learning, Lindsay does not hold value in using

technology in her teaching.

When questioned about technology and literacy in her teaching, Lindsay admitted that

she stumbled with answering the questions because "I don't have a huge place for [technology]

in my classroom right now. I just don't. I don't have a need for it because I've been teaching for

nine years really without it." While technology doesn't have a large place in her classroom,

Lindsay recognizes its importance in teaching, but she feels like "when you talk about pulling the

teacher out and putting technology in, I just don't think that's a good step. I don't think that's a

good way of looking at it." Therefore, she is mainly left with questions surrounding how

technology can be used for teaching until she sees "what [technology] can do for literacy." She

doesn't want to lose the content or have her lessons "watered down because I am just trying to

put technology into play."

Lindsay feels so strongly about her ideas that she senses a personal clash between

technology and education and literacy. She does not want teachers to be replaced by technology

and when it comes specifically to reading and writing, she is not comfortable if writing "becomes

something that [students] can just create or illustrate without ever placing a word on a page."

Literacy will always be closely associated with communication, reading, and writing, and putting

some sort of technological device into the hands of her students does not "convey the importance

of learning to read and write. Until my students can head off to college and never have to write

another essay again, I will not ease up on certain standards in my classroom concerning literacy."

Lindsay's traditional viewpoints of literacy and technology are evident in her teaching practice.

Lindsay spends a lot of time on traditional reading and writing devoid of technology

where she "really just takes what [my students] are reading and writing and learning about it and

then putting that on paper and analyzing. We do a lot of essays that way as well." Lindsay also

spends a lot of time talking about the different types of writing and thinks her students learn

mainly from "the feedback they get, the work they produce, and then what I'm telling them and

how to either fix up or change the way they are communicating within their written work."

Lindsay uses technology in limited capacities. One area technology is used is in

improving her lectures as she "makes them more interactive" so students are able to make

stronger connections to the information Lindsay presents. For example, as students began work

on research papers, Lindsay provided minilessons about how to look for good online sources to

get past Wikipedia, and to slow down and analyze the sites they would be using. Discussions

centered around website publishing, credential checking, and the differences between analyzing

and proving in writing. Lindsay also created a presentation on movie trailers in preparation for

having her students create movie trailers over their class novel, *The Giver.* After teaching

minilessons on the purpose of a movie trailer, plot structure, scene development and constructing

a storyboard, Lindsay set her students free to create their trailers. She thinks the project is "kind

of fun and allowed them to work together," but isn't sure if the project was "directly related to

literacy, necessarily." She recognizes that "my students like it, but other than that, I don't know.

I guess I just don't see a huge lack in my teaching or my classroom without having or knowing

it." Lindsay uses technology in ways that support traditional reading and writing and in limited

roles such as information gathering, presenting information, and word processing.

Emerging conceptions

Maggie's understanding of literacy specifically points to an evolution that includes

reading, writing, speaking, listening, as well as basic thinking. Maggie's definition and

understanding "as with most things, has changed and evolved over time." Maggie's definition

originally adhered to the classical notion of "simply the ability to read and to write." Through her

college and early teaching experiences, Maggie broadened this definition to include "thoughts to

be examined, ingested, interpreted, argued over, understood, and written about." This broad

definition of literacy "begins with the basic block of comprehension, and without that

foundation, nothing more can get built." Therefore, Maggie's understanding of literacy is

multilayered, with a strong foundation as the starting point.

Maggie's understanding of literacy continues to change "as technology invade[d] every

aspect of daily life, even my classroom." She is "concerned what we consider to be literate:

tweets. Everything is getting smaller and shorter and faster and that's where the kids are. Why

say it in 10 words that sound cool if I can just say it in three?" Maggie doesn't necessarily think

this type of literacy is valuable in a classroom setting despite how technology has shaped what

constitutes literacy in today's world. On the other hand, Maggie recognizes her students are

much more visual than the ones she had 27 years ago and tries to tap into the way they learn "to

become literate in other ways, " recognizing the importance of understanding how to read and

understand images. Still, Maggie is reticent to change her understanding of literacy. She will not

give up her books, "for to open the pages of a book, to read it and to interpret it and to write

about it and to discuss it – that's literacy."

Maggie's main focus when she thinks of technology and literacy learning is "finding

valid ways to use technology where [my students] are actually learning…To me that's the big

part and we are getting there slow but sure." For Maggie, valid is when the technology

"reinforces learning…If it engages them but at the same time teaches them a skill that will be

necessary for the future learning, I think that's valid." The difficulty with technology and literacy

learning is Maggie thinks her students see technology as "a toy first. It's not an educational

tool… So they are Facebooking and they are trying to get on other websites. Absolutely

disengaged." Maggie thinks this disengagement prevents students from learning skills of

"researching and thinking and then putting it together." This research includes recognizing while

the "Internet is a great place, how do we find valid places to do our research when there are

perfectly good books in the library?" Although Maggie does struggle with valid learning

opportunities with literacy and technology, she does not think her students are missing anything

if she does not always use technology in the classroom. She thinks students will use technology

regardless and learn from it anyway.

Maggie remains firm in her views on technology and literacy teaching, especially when

dealing with particular aspects of literacy. She "hates" writing on the iPads:

It doesn't give them the freedom to take a pen and go… "I want that sentence to go up

here. That's dumb, I want to cross that out." By the time they've tapped on it and gotten

it there, "Oh darn, I didn't mean to highlight the whole sentence, I just want that one

word. What was I going to do again?" I've watched them stand in front of me and try to

take a word out and respell. It's so hard to edit on the iPad, and to me that is a frustration.

Maggie has tried to use the iPads for reading purposes, but she has run into roadblocks as "you

can't highlight or underline PDF's of stories off the Internet." She thinks "a literate reader in my

opinion is active," and therefore underlining, circling, taking notes, and asking questions in texts

as they read. Even with apps that do allow such navigation, Maggie thinks "it takes time…and if

you don't touch it just right or your highlighter is wrong, it comes out ugly so nobody uses it."

Maggie continues to adhere to traditional views of writing because "they haven't shown me

anything that is better than what I've been doing. If I am successful at teaching writing, and I

have been successful doing it for 27 years, why would I change that?"

Maggie, though, recognizes that "technology is here to stay, so I take that as a challenge

to make sure that when we use it, it is valuable and valid." Therefore, Maggie has experimented

with a variety of technological programs to help her literacy teaching. She has tried apps on the

iPad like iBooks to create student reading materials, a PDF annotating app to teach her students

how to be active readers, and numerous versions of Shakespeare to help with translating and note

taking. Maggie has found these experiments "frustrating" because they often take more time than

expected or don't quite accomplish what Maggie wishes they would.

Maggie has held on to her traditional views of literacy learning and teaching because she

has yet to find how technology can do anything better than how she currently teaches and how

her students learn. However, Maggie attributes these views to wanting to take the time to use

technology for valid reasons, which cannot happen overnight. Therefore, rather than outright

rejection of technology in literacy teaching and learning, Maggie is slowly integrating

technology into her classroom where she feels it will enhance her students' learning and they

will find value in using it to increase their understandings of literacy.

New conceptions

Rick recognizes his past experiences as being firmly grounded in reading and writing, but

now his focus has turned to how to make meaning from a variety of sources and mediums. When

thinking about his early understandings of literacy, Rick feels "for the most part my education

has dealt mostly with people who thought literacy consisted of reading a text and answering

questions or writing an essay." Today, Rick thinks literacy means "the ability to take

information, interpret and understand it, in order to make new meaning [and] information out of

it." Meaning can be found in "different types of media and…the literacy that goes with it: text

literacy, technology literacy, visual literacy, audio literacy, video literacy, etc." These different

types of literacy have impacted Rick's understanding of literacy as

> We are always going to need to know how to read and write, but we also need to know
>
> how do we incorporate these different medias and create something to not only show our
>
> understanding, but it gives understanding to others and maybe is a thinking point for
>
> someone else to go off of.

For example, Rick believes it is important to understand how to make meaning from a picture

and to recognize all the different feelings and emotions inherent in one image. Similarly, the

creation of a podcast that incorporates media, music, and voice to create a new form of

communication is a way to take " information from different sources and understand it and digest

it and make new meaning."

Therefore, Rick has started to think of literacy having old goals and new goals. For

example, old goals include reading a book, understanding it, and writing about it. New goals

would be to take the same book, read it, understand it, write about it, "but communicate it to

others. Show that you are literate by creating something new to demonstrate [your

understanding]." Rick feels it is important for him as a teacher and for his students to be able to

access all the different literacies and make meaning from them in order to be successful for the

future.

Rick has rethought his views on student learning when considering what his students may

pay attention to in his classroom, especially related to the technology. For example, when

learning about Shakespeare, Rick's students may learn more from a virtual fieldtrip of the Globe

Theater rather than just talking about it in class:

> It was a cartoon kind of thing, but it walks you through and you hear from different
>
> characters and there are a lot of images. Students can see that even though it's a drawing
>
> of what the Globe would have looked like, they can see it and think, "Okay, now maybe I
>
> can have a better understanding of that [idea]."

Additionally, Rick uses these ideas when incorporating research into his classroom. He has his

students make meaning from traditional books, Internet websites, podcasts, pictures, and videos.

This idea of enhancing literacy learning through technology has been evident for Rick as

his students "kind of surprise me" with the learning they are able to demonstrate. Oftentimes his

students extend their learning beyond just answering questions for class "because they are

finding these different resources from different websites that I had given them, and the

information they are presenting to me is more than just answering the question." Rick views this

type of learning important for his students' future job prospects as "a lot of jobs are going to

incorporate using that technology to take that writing and take that research and create something

new." In order to prepare his students for this type of future where literacy and technology

meaningfully interact, Rick's views on technology and literacy learning have changed to use

technology "transformationally" where it aids in literacy and helps his student gain new

understanding.

Rick enacts his understanding of literacy as meaning making in his teaching practice. His

students engage in the meaning making process by creating different projects, and Rick uses

technology to support reading and writing. Admittedly, Rick says before his new understanding

of literacy was shaped by his master's degree, literacy "maybe would be some lecture and then

read and discuss and then take a quiz or a test." While Rick still feels there is a place for reading

and discussing, he now spends much of his instruction and teaching practice finding meaningful

ways to integrate technology for students to make new meaning from what they are learning. For

example, while reading *Animal Farm,* Rick first started with a video on the Russian revolution

and Stalin for character and conflict comparison as well as background for the book. Rather than

a final essay over the novel, Rick's students had many video project options for their final

assessment. These options included making a propaganda film from the perspective of the

animals, a newscast explaining how people in town might feel about the farm, a talk show with

characters from the book, or a podcast that included music and pictures and talking, also dealing

with characterization. The purpose was to look more in-depth at the characterization and conflict

and as a way to cover ideas that students may not have learned from the book. In projects like

this, Rick readily admits his students often go beyond what is required and do a "good job of

passing along new information and more information than I asked for…and it's relevant

information."

Rick has also incorporated technology to support literacy learning by changing lessons

from previous years. When discussing the characters in *Much Ado About Nothing,* last year, Rick

spent a class period telling his students about every single character by asking "if you were going

to cast a movie, who would you pick for these characters and why. I think that was okay, but I

don't think that was the most valuable." This year, Rick had his students first start by researching

the different characters on Spark Notes, and then using a word processing tool to have them

create a family tree "showing how all the different characters are related to one another and show

those connections and physically draw connections." Rick had trouble grading this assignment

for he didn't know how the assignment was going to turn out or what exactly he was looking for,

but he thought "it was just as effective or more effective than me lecturing for 45 minutes about

the different characters."

Rick has sought ways to change his teaching practice to break out of the traditional

methods of reading and writing by integrating different technology projects to support not only

multiple literacies but also meaning making. These projects are primarily student-centered in

nature and Rick thinks they are more valuable to his students' learning than simply reading a

book, taking a quiz, and writing an essay.

Discussion and Implications

With the exception of Rick, the difficulty inherent in Lindsay's and Maggie's

understanding of literacy is that, over time, literacy in their classrooms has become stagnant,

creating almost a vacuum where traditional academic literacies of reading and writing become the sole focus of teaching and learning.

The first step for Lindsay and Maggie and a reminder for Rick is to recognize that literacy is always in motion (Cole & Pullen, 2010). To continue thinking of literacy in terms of just reading and writing is problematic (Jewitt, 2002). Rather, literacy forms and is formed by shifts of culture, capital, and emergent technologies (Luke, 2004). The complexity of literacy teaching and learning requires constantly evolving knowledge surrounding literacy. A more expansive view of literacy calls for English teachers – and in this case Lindsay and Maggie – to constantly redefine what it means to be literate (Cervetti, Damico, & Pearson, 2006), in order to respond to their students' responsibilities in the rapidly changing world.

The teachers at College Prep Academy need more formal knowledge or knowledge-for-practice (Cochran-Smith & Lytle, 1999) to expand their definitions of literacy and to find ways to use students' out-of-school literacies to support those within the school and institutional setting. The goal is not to find one method, but to have a flexible repertoire in response to different students (Luke, 2004) as well creating a more multiliterate view of curriculum (Boche, 2014). A multiliteracies perspective as well as the knowledge processes inherent in this perspective will help these teachers break free from the stagnant definitions they currently hold. Additionally, understanding that "responsive digital instruction today must focus on the contexts of literacies that are used" (ILA, 2018, para. 10) will help Lindsay, Maggie, and Rick recognize that technology plays a role in this process and they must continue to incorporate it into their teaching practice.

Literacy first, then technology

Recognizing that new technologies have changed the ways in which we make meaning and, as such, require new meaning-making strategies, Lindsay and Maggie must develop an understanding of the interplay between literacy and technology. The focus, however, is on literacy and multiliteracies and not technology (Hicks, 2006). Hicks (2006) argues that teachers should instead be focusing on how literacies are affected by all that technology enables. In fact, "multiliteracies are relevant to English classrooms because we – students perhaps more importantly than teachers – have the advanced ICTs that allow multiliteracies to happen" (Grabill & Hicks, 2005, p. 303). Therefore, teachers must have opportunities to "think critically about pedagogical concerns…and about the intellectual, social, cultural, political and economic impact of using [technology]" (Swenson et al, 2005, p. 219) when considering literacy's role in the classroom.

Multiliteracies also offers opportunity for agency. First, these new technologies and literacies allow users to co-construct their knowledge and understanding more than ever before (Cope & Kalantzis, 2010; Kimber & Wyatt-Smith, 2006). Teachers are no longer isolated individuals who are forced to come together once a week for collaboration. Instead, there exists more opportunities for co-authoring and tapping into stored knowledge to develop and shape learning experiences for students with digital learning and texts (Kimber & Wyatt-Smith, 2006). Thinking about literacy and technology in light of multiliteracies forces teachers to be proactive. Multiliteracies is constantly changing, and teachers can be designers and co-constructors of their own teaching and learning. Rather than waiting for technology to decide how literacy functions in the classroom, the teachers could instead shape how the technology promotes different types of literacy learning, dependent on their goals. For example, they should be instructing technology

companies on how apps should work to support revising and editing in the writing process rather

than rejecting technology altogether. In this regard, teachers are the key agents in their efforts to

change what they would like to see in their classrooms (Young & Bush, 2004). An expanded

definition of literacy and expanded views of literacy and technology will also greatly serve

Lindsay, Maggie, and Rick as they consider enacting these views in their teaching practice.

TPACK as just the beginning

In the TPACK model, the goal is for teachers to gain technological pedagogical content

knowledge (Mishra & Koehler, 2006; Koehler & Mishra 2009). Much of the attention in TPACK

is on matching technology with curricular goals (Blanchard, 1994) and learning the different

techniques and skills to meaningfully integrate technology. In the TPACK model, technology is

not considered a static entity. Rather, teachers need proper techniques and skills to meaningfully

integrate technology with both informal and formal knowledge. While recognizing the

affordances and constraints of technological devices as geared towards content areas, Hicks

(2006) contends the focus should be less on technology and more on what it means for students

and teachers to be multiliterate. Hicks argues "we want the conversation to be about more than

adaptation and use; we want it to be about sound teaching and critical literacy practices that

incorporate technology" (Hicks, 2006, p. 47). With TPACK, the focus is on design and literacy

first and technology second, as teachers need to consider why different technologies matter to

English teaching, what it means to be a producer and consumer of traditional and digital texts,

and how different literacies and technologies relate to the larger picture of literacy learning

(Hicks, 2006; Swenson et al., 2006). Developing TPACK in teachers requires much more than

creating a product with technology. Explicit connections between technology and literacy

learning (Hutchison & Wang, 2012; Boling, 2008) are needed to move beyond just using

technology in a basic way in English teaching and learning.

Much of the focus for the teachers in this study was on the technology. They were

curious as to how iPads could help in their classrooms, what apps and programs other people

were using to be successful, and how to use technology in valid and reliable ways. They were not

sure if they were using the technology in the optimal way but as a substitution tool for pencil and

paper. For example, Lindsay often had questions about what technology should look like for her

curriculum. Was it supposed to be some sort of game that helped with vocabulary learning? Was

it supposed to help her students understand how to organize information by providing a

confusing paragraph where students would have to reorder the sentences to help it make sense?

Was the technology supposed to aid in the writing process by providing a revolutionary way to

revise and edit on the iPad without having to print out paper copies? Lindsay, Maggie, and Rick

were all left wondering when the technological revolution would take hold and what that was

supposed to look like in their teaching practice.

Connecting TPACK to literacy is a difficult concept that different researchers have linked

to teacher learning in successful ways. For example, Rosaen & Terpstra (2012) created a New

Literacies project that examined eight different literacies through a wiki with online activities

and articles, videos and classroom examples, and written reflections. Similarly, Graham &

Benson (2010) started with small projects, analyzing TV shows and creating non print-based

activities, in order to foster awareness, critical thinking, and recognizing multiple modes to

create meaning. These inquiry-based approaches to integrating technology in literacy practices

(Hicks, 2013) can be flexible, collaborative, and allow teachers to think rhetorically about the

issues of technology in teaching. Understanding the relationships between traditional and digital

texts, while capitalizing on their unique potentials (Swenson et al., 2006), can create

opportunities to increase learning, competence, and attitudes towards literacy and technology

(Hutchison & Wang, 2012,). Besides the creation and design of texts, teachers also need to

discuss the effects of participating in the design process (Miller, 2007) in order to gain a better

understanding of how they themselves become more multiliterate (Hicks, 2006) and, in turn, help

their students become more multiliterate as well.

Conclusion

This study has shown that as new technologies take hold in the literacy classroom,

teachers will need to be equipped with new understandings of literacy as well as new methods to

enact these understandings. Literacy education can no longer be limited to the traditional

literacies of reading and writing. Instead, teachers will need to help students think of literacy

differently and as permeating into all areas of their lives. The teachers in this study were very

much into the replication process of teaching and learning: The students read a book, gained

some new insight into what they read, and wrote essays or created presentations on what they

learned. There is merit in these processes as they can help students develop close reading skills,

develop academic writing skills, and develop their vocabulary and exposure to literature. The

replication process, however, does not always allow for critical conversations or connecting

literacy to students' out of school literacies.

Instead, to help students become more multiliterate into today's world, teachers will need

to model multiliteracies and scaffold student learning to help make explicit connections between

what students are learning in school to literacy acts they engage with outside of school on a

regular basis. The teachers in this study provided glimmers of new thinking and instructional

practices to support these ideas, but also presented missed opportunities to extend their own

thinking and learning as well as their students. Literacy education can no longer let these

opportunities pass by. Therefore, we must equip teachers with the necessary knowledge and

skills to engage in this important intellectual work.

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