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ICT and Critical Literacy in Middle School for 21st-Century Competencies and Critical Democracy

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2019

Abstract

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by

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MA, University of Puerto Rico, 2006

BA, University of Puerto Rico, 1995

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Learning, Instruction, and Innovation

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Abstract

Twenty-first-century competencies have been identified as vital thinking and working skills for the 21st century. Students could contribute to social change by using information and communication technology (ICT) while developing 21st-century competencies, but this type of experience is not frequent at schools. The purpose of this qualitative case study was to examine the experiences of 2 middle-school teachers and their 6th-grade students as they used critical literacy strategies and ICT to promote 21st-century competencies and critical democracy in a Midwestern public school. This case study was guided by the critical democracy, critical pedagogy, and competency-based education theories. The research questions asked what the experiences of the teachers and the students were, what were the reflections of the teachers about their teaching practices, and what were the students' reflections about their learning experiences. Data were gathered through interviews, students' online discussion forums, and artifacts. An adapted analytic induction process was used to analyze the data and explain the phenomenon. The key findings generally supported the framework developed by the Partnership for 21st Century Learning (P21), which is a coalition of businesses, education leaders, and policymakers whose goal is to promote 21st-century competencies in schools. However, the findings indicated that when applying the P21 Framework for social change purposes, an international human rights perspective needs to be added. This study demonstrated how students can develop 21st-century competencies through the implementation of ICT to address injustice and inequity in society and contribute to positive social change.

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Dedication

To the wind beneath my wings, my loving husband Ángel Luis, and my daughters Nina, and Tamia;

to my dear parents, Juan and Carmen, who were always faithful support and inspiration;

and to all immigrant and minority students who struggle every day to find the kind of education they deserve.

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Chapter 1: Introduction

Introduction

Twenty-first-century competencies are essential to meet the requirements of emerging jobs and social transformations. Competencies like critical thinking, problem-solving, creativity, innovativeness, communication and collaboration skills, and information literacy have been identified as vital thinking and working skills for the 21st century (Greenstein, 2012; P21, 2019b; Pauw, 2015). Because of the importance of these competencies, researchers have studied how they can be developed in school (Besnoy, Maddin, Steele, & Eisenhardt, 2015; Delgado, Wardlow, McKnight, & O'Malley, 2015; Kuisma, 2017). However, there is still a gap in the literature regarding how teachers can use these competencies for social change as part of the language arts and social studies curriculum in middle school. In this study, I explored teacher use of ICT and critical literacy to promote 21st-century competencies and critical democracy in middle school. The main sections of this chapter include the background and purpose of the study, the problem addressed, the research questions, the theoretical and conceptual framework, and a description of the nature and significance of the study.

Background

When reviewing the literature on teacher use of ICT and critical literacy to develop 21st-century competencies and critical democracy or social change, I found that those constructs were usually researched independently. Researchers have studied the impact of using ICT in social studies or language arts classrooms (Alexander, 2014; Lucey, Shifflet, & Weilbacher, 2014), the effect of ICT on students' academic

achievement and engagement (Cener, Acun, & Demirhan, 2015; Howard, Ma, & Yang, 2016), and the influence of teachers' pedagogical beliefs and competencies on the effectiveness of integrating ICT (Arancibia & Badia, 2015; Area-Moreira, Hernández-Rivero, & Sosa-Alonso, 2016; Hsu, 2016). However, more research is still needed about how to use ICT for social justice or critical democracy (Montgomery, 2014), especially research involving qualitative methods (Howard et al., 2016).

Regarding the advancement of 21st-century competencies, researchers have studied teachers' perceptions of the competencies (Jia, Oh, Sibuma, LaBanca, & Lorentson, 2016; R. D. Smith, 2014), how inquiry-based learning activities helped promote the competencies, especially in science and math classrooms (Chávez, Cantú, & Rodríguez, 2016; Wan Husin et al., 2016), and how the competencies could be assessed (Boyacı & Atalay, 2016). However, there is a gap regarding how to develop the 21st-century competencies in language arts and social studies or civics classrooms.

Researchers have also studied social studies and language arts teachers' experiences implementing the critical literacy approach (Dover, Henning, & Agarwal-Rangnath, 2016; Hall, 2016). Some of the issues addressed have included students' academic achievement (Gaston, Martinez, & Martin, 2016), multicultural experiences (Gibson, 2017), creation of new identities (Honeyford & Zanden, 2013), multiliteracy and multimodal learning experiences (Burke & Hardware, 2015), and students' motivation and engagement (Curammeng, Lopez, Tintiangco-Cubales, Locke, & Simon, 2016). Only one of those studies, Sarker and Shearer (2013), referred to the implementation of the critical literacy approach by integrating ICT while developing

21st-century competencies for social change. Nevertheless, these researchers only focused on global citizenship and did not address other 21st-century competencies, and neither included the teachers' perspectives.

Finally, researchers have studied critical democracy practices mainly in civics and social studies courses. Among the issues addressed are educators' perceptions about teaching for social justice and the relationship between democracy and education (Castro, 2014; Zyngier, 2013, 2016), experiences promoting civic engagement (Conner & Slattery, 2014; Epstein, 2013; Henning, 2013), and the evaluation of civics, literacy, or social studies programs for civic engagement (Moore, Beshke, & Bohan, 2014; Truong-White & McLean, 2015). Even when the experiences of teachers promoting civic engagement and teaching for social justice have been researched, the development of 21st-century competencies was not considered in the analysis. In conclusion, this study contributes to the literature about how teachers can promote 21st-century competencies in middle school through the implementation of critical literacy strategies and the use of ICT to promote critical democracy.

Problem Statement

Neomillennial students could contribute to social change by using ICT at school while developing 21st-century competencies, but students are not using digital technology at school to fulfill those goals (Kong et al., 2014). Students use digital technology at school mainly to access class information through online portals and to take online tests (Project Tomorrow, 2014). However, digital technology can empower students to communicate in virtual spaces while promoting democracy and social justice

(Bartow, 2014), but additional research is needed to explore how virtual communication can foster education for critical democracy in primary education (Montgomery, 2014).

Kong et al. (2014) identified two crucial research issues for e-learning in school: (a) bridging the gap between school curriculum and the actual social context, and (b) developing 21st-century competencies of learners. Lucey, Shifflet, and Weilbacher (2014) studied the results of a State of Illinois survey about the instructional trends of elementary and middle school social studies teachers for the academic year 2008-2009. They found that most of the teachers preferred whole-group and teacher-centered strategies while student-centered activities were less frequent. Even when the teachers acknowledged in the survey that one of the most important goals of social studies was to promote critical thinking, their teaching practices were not compatible and were aimed primarily to teaching basic facts (Lucey et al., 2014). Researchers have concluded that further research is needed about the use of ICT in social studies (Cener et al., 2015; Chai, Koh, & Tsai, 2013; Howard et al., 2016), the assessment of 21st-century competencies (Pérez-Sanagustín et al., 2017), and about how to promote critical democracy at school (Montgomery, 2014). In this study, I aimed to contribute to the literature by examining how critical literacy and ICT can be used in middle school to advance the development of 21st-century competencies for social change.

Purpose Statement

The purpose of this qualitative case study was to examine, in-depth, the experiences of two middle-school teachers—a language arts teacher and a social studies teacher—and their sixth-grade students as they used critical literacy strategies and ICT to

promote 21st-century competencies and critical democracy. The study helps fill the gap about how to develop 21st-century competencies for social change in middle school. My objective was to provide an opportunity for participants to reflect on their learning and teaching practices using critical literacy and ICT for critical democracy purposes and for the development of 21st-century competencies.

Research Questions

Research Question 1: What were the experiences of two middle school teachers using ICT and critical literacy to promote 21st-century competencies and critical democracy in a Midwestern public school?

Research Question 2: What were the teachers' reflections about their critical literacy teaching practices using ICT to develop 21st-century competencies and critical democracy?

Research Question 3: What were the students' reflections about their learning experiences using ICT to develop knowledge, 21st-century competencies, and critical democracy?

Theoretical and Conceptual Framework

Theoretical Framework

This study was guided by the critical democracy, critical pedagogy, and competency-based education theories. Dewey (1916/2011) described the importance of democratic education in democratic societies, and Goodman (2012) widened the concept of critical democracy by explaining how schools are essential in developing democratic practices leading to civic engagement and social transformation. Critical pedagogy, as

developed by Paulo Freire, Henry Giroux, and others, constitutes a theoretical movement of praxis-reflection. It advocates for an education of analysis and critical evaluation of reality in light of the relationships that knowledge, authority, and power exercise in educational processes while encouraging learners to act for the transformation of social injustice (Freire, 2004; Giroux, 2013).

On the other hand, 21st-century competencies have been described as essential for neomilennial students (Ananiadou & Claro, 2009; P21, 2019b). Twenty-first-century competencies comprise knowledge, skills, and dispositions for critical thinking, creativity, communication and collaboration, ICT use, problem-solving, metacognition, global awareness, leadership, and career readiness (Greenstein, 2012). The Partnership for 21st Century Skills (P21) is a coalition of businesses, education leaders, and policymakers to promote 21st-century competencies in schools in the United States. The P21 developed a framework that organizes the competencies into those related to learning and innovation, skills related to the core subjects, skills essential for life and career, and

those associated with the management of information, media, and technology. P21 Framework is shown in Figure 1 as it is presented in their webpage (P21, 2007).

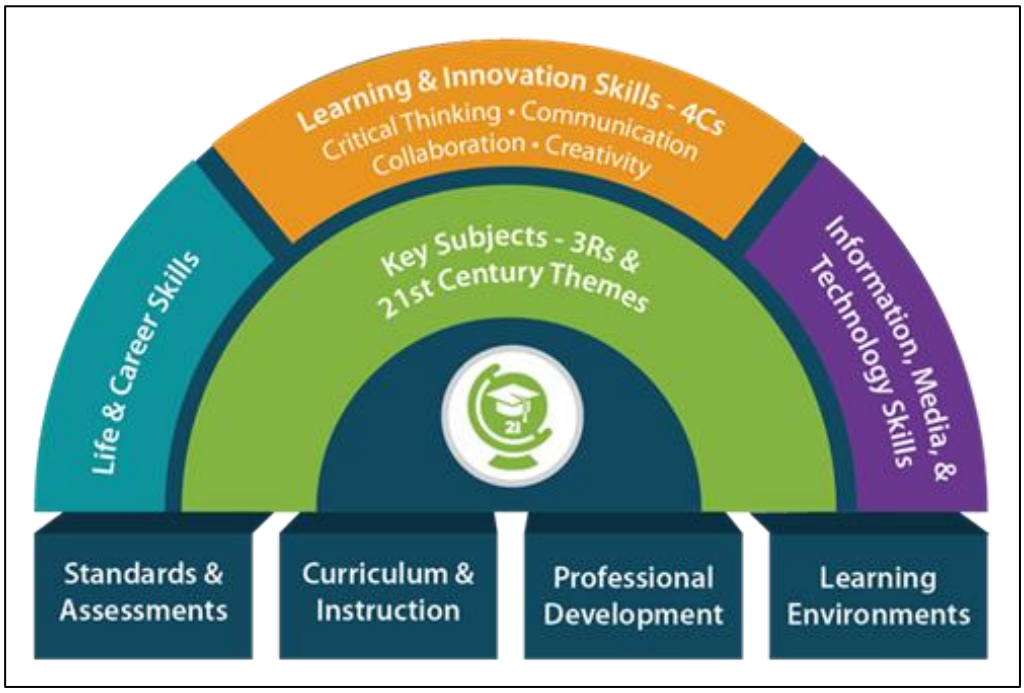


Figure 1. P21 Framework for 21st-Century Learning (P21, 2019). Used with permission of Battelle for Kids and the Partnership for 21st Century Learning. © 2019, Partnership for 21st Century Learning, a network of Battelle for Kids. All Rights Reserved.

I used critical theory and the P21 competencies model as the theoretical lens through which I examined the case. Since the purpose of the case study was to examine how critical literacy and ICT can be integrated in the curriculum to develop 21st-century competencies and promote social change, both critical theory and competency-based learning theory were fundamental for the case analysis. For that reason, I developed a conceptual framework based on these theories for this study.

Conceptual Framework

Building on the theoretical framework, the conceptual framework I designed was intended to explain how designing curriculum using critical literacy and ICT from a critical democracy and critical pedagogy perspective may contribute to the development of 21st-century competencies with a social change purpose. Critical literacy is rooted in critical pedagogy theory, and is focused on reading critically and producing counter-narratives using different media (Montgomery, 2014). The critical literacy model includes four dimensions: disrupting the commonplace, interrogating multiple perspectives, focusing on sociopolitical issues, and taking action to promote social justice (Lewison, Leland, & Harste, 2015).

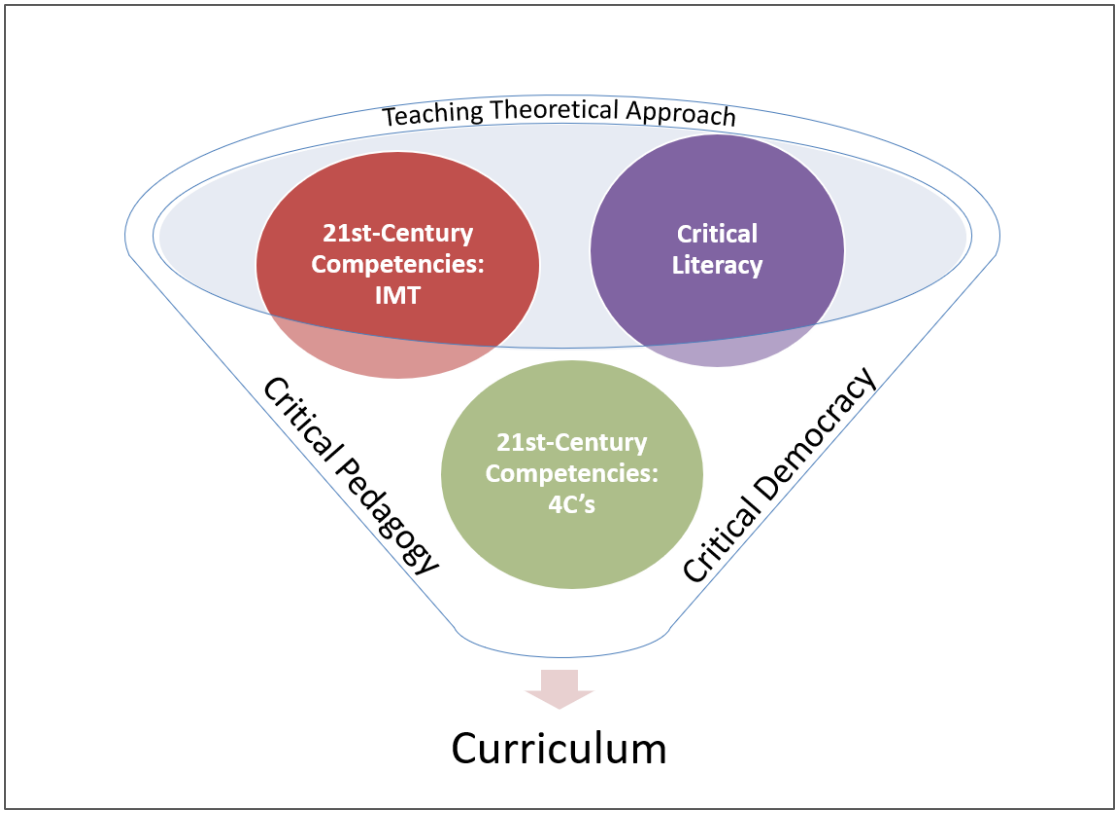


Figure 2. Conceptual framework.

The way in which the theoretical framework was applied to build a conceptual framework is shown in Figure 2. This figure shows how the different theories can interact in the development of the curriculum to help students develop 21st-century competencies through critical literacy activities for critical democracy and social change.

The conceptual framework was helpful when analyzing how the students developed 21st-century competencies such as critical thinking, communication, collaboration, and creativity (4Cs) when ICT was integrated to critical literacy activities. The model also contributed to my analysis of how teachers supported the development of information, media, and technology skills from a critical perspective and how the general learning environment based on critical theory made students feel confident in expressing themselves about contentious social issues. Finally, the conceptual framework contributed to my exploration of how students can be empowered as agents of social change in their respective institutions while developing 21st-century competencies. In Chapter 2, I offer a more thorough explanation of the theoretical and conceptual frameworks.

Nature of the Study

This study's case study design made possible my description and analysis of the teachers' and students' experiences and reflections about using ICT and critical literacy to promote 21st-century competencies and critical democracy. These two teachers developed with their sixth graders a unit about human rights in which both language arts and social studies skills were integrated. I gathered the data on the use of ICT for learning purposes and social action after the teachers had implemented the unit. A case

study design allows for different sources of data to shed light on the study's problem. The sources of data in this study included semi-structured interviews with teachers, online discussion forums with the students, and artifacts. I used the qualitative data analysis software Nvivo for data management, and I used an analytic induction process to analyze data and interpret results (Merriam, 2007). This analytical approach was appropriate due to the solid theoretical background of this study, and it helped me organize and describe data inductively through sensitizing concepts.

Definitions

Competencies: "A competence is defined as the ability to successfully meet complex demands in a particular context through the mobilization of psychosocial prerequisites (including both cognitive and noncognitive aspects). This represents a demand-oriented or functional approach to defining competencies" (Rychen & Salganik, 2003, p. 43). "A competence is the ability to apply learning outcomes adequately in a defined context (education, work, personal or professional development). A competence is not limited to cognitive elements (involving the use of theory, concepts or tacit knowledge); it also encompasses functional aspects (involving technical skills) as well as interpersonal attributes (e.g. social or organizational skills) and ethical values" (Ananiadou & Claro, 2009, p. 8).

Literacy: "Literacy is . . . not only about reading and writing but also about the characteristic ways of thinking, acting, interacting, feeling, valuing, and the use of tools and symbols in context-specific situations" (Gee as cited in Lau, 2013).

Critical literacy: "Active questioning of the stance found within, behind, and among texts. Critical literacy is an emancipatory endeavor, supporting students to ask questions about representation, benefit, marginalization, and interests" (Stevens & Bean, 2007, p. 12).

Critical democracy: "Critical democracy . . . moves beyond the workings of political institutions to promote a form of associated living centered on a moral commitment to the public good . . . critical democracy explicitly promotes values of equality and social justice and works not only to address, but also to redress, issues of oppression" (Montgomery, 2014, p. 200).

Assumptions

I designed this study based on the following assumptions: (a) sixth-grade students would be able to reflect on their learning experiences and the development of 21st-century competencies when defined for them; (b) teachers implementing a critical literacy approach would be able to reflect on the development of 21st-century competencies for critical democracy; (c) both teachers and students would collaborate by providing insightful, substantive, and truthful answers to the interview questions to the best of their abilities; (d) students would have the ability to respond to interview questions through online discussion forums; and (e) both teachers and students would be interested in participating in member checking procedures. All these assumptions were necessary for the context of the study and critical to its meaningfulness.

Scope and Delimitations

In this study, I investigated the experiences of two middle-school teachers and their students while implementing critical literacy strategies and ICT to develop 21st-century competencies and critical democracy. Few researchers have studied the development of 21st-century competencies in social studies classrooms. For that reason, a social studies classroom in which critical literacy is integrated to the curriculum was the focus of study. This inquiry was bounded by the essential criteria that teacher participants were middle-school educators implementing critical literacy strategies with a social change purpose who were able to dedicate time to the study and were willing to include his or her students in the study so that I could understand the students' perspectives as well. Since more research is available at the high-school level, I chose middle-school students because they are old enough to respond meaningfully to the interview questions. I used purposeful sampling to recruit participants. Other aspects related to the teaching and learning experiences, like meeting Common Core Standards, analyzing students' academic achievement in content areas, or quantitatively analyzing students' improvement of 21st-century competencies were not part of this study because those matters have been covered in previous studies.

Thick descriptions of the context of the study provide information for persons in similar settings to decide if the results can be applied or are useful for their particular contexts (Shenton, 2004). I extensively described the educational context and the data collection procedures which increased the potential transferability of results. The results of this study may inform teachers and educational researchers about how critical literacy

and the use of ICT may support the development of 21st-century competencies for social change.

Limitations

The specific context of the experiences studied may limit the transferability of the results. However, to increase the potential transferability of the study, I described extensively the data collection procedures and participants recruitment process. I also included a detailed description of the research design, data collection and interpretation procedures, and reported any missteps or flaws to contribute to the dependability of the study.

Significance

This study allowed me to understand how two middle school teachers used ICT and critical literacy to promote 21st-century competencies and critical democracy. The results expand the growing body of research on the importance of using ICT to develop 21st-century competencies and social change. The study has significance for educators interested in a contextualized and pertinent education that responds to the demands of a highly globalized and digitalized world. The study was an opportunity for participant teachers to reflect on their teaching practices and consider further actions to improve the way they integrate technology and critical literacy for the development 21st-century competencies and social change.

Researchers have concluded that more research is needed regarding how critical digital civic literacy can be encouraged at school (García, Mirra, Morrell, Martínez, & Scorza, 2015; Montgomery, 2014), and this study contributes to this under-researched

area. Most of the experiences of producing digital content in schools are related to subject areas' facts (Montgomery, 2014); this study contributes to the analysis of alternative experiences in which ICT are used within the school environment not only for traditional educational purposes, but also for social change.

Summary

In this chapter, I introduced the background, problem, research questions, theoretical framework, and conceptual framework of this study. The purpose of this study was to examine in-depth the experiences of two middle-school teachers and their sixth-grade students in their use of ICT and critical literacy strategies to promote 21st-century competencies and critical democracy. Since 21st-century competencies are more frequently assessed in science classrooms (Jia et al., 2016; Wan Husin et al., 2016; Wang, Hsu, Campbell, Coster, & Longhurst, 2014), this study expands the knowledge about how the competencies are promoted in social studies and language arts classrooms.

In the next chapter, I present a thorough review of the literature. The chapter includes a description of the theoretical and conceptual framework, followed by a literature review regarding the impact of using ICT in the classroom, the development of 21st-century competencies, the implementation of critical literacy, and the promotion of critical democracy in schools. Chapter 2 concludes with a summary of the major themes found in the literature and their application to the phenomenon and purpose of this study.

Chapter 2: Literature Review

Introduction

Teacher use of information and communication technology (ICT) at schools is essential for neomillennial students' contribution to social change and the development of 21st-century competencies (Kong et al., 2014; Singh & Walsh, 2012). However, students use ICT mainly to support their school work by accessing class information through online portals and taking online tests (Project Tomorrow, 2014). In very few instances do they use ICT to participate actively and critically in social change processes related to issues that affect them. Teachers use ICT mainly for assigning homework, practicing basic skills, and conducting research (Domingo & Marquès, 2013; Project Tomorrow, 2011), and rarely use Web 2.0 tools or online discussions to support students' learning even though ICT can empower students to communicate in virtual spaces while promoting critical democracy and social justice (Bartow, 2014; Montgomery, 2014). Additional research is needed to explore how virtual communication and critical literacy strategies can be aligned purposefully to foster 21st-century competencies and an education for critical democracy in school (Montgomery, 2014). The purpose of this dissertation was to examine how two middle-school teachers and their students use ICT and critical literacy strategies to promote 21st-century competencies and critical democracy.

This literature review includes a discussion about how teachers use ICT and critical literacy to promote 21st-century competencies and critical democracy. Developing 21st-century competencies is essential to meeting the requirements of

emerging jobs. Competencies like critical thinking, problem-solving, creativity, innovativeness, communication and collaboration skills, and information literacy have been identified as vital thinking and working skills for the 21st century (Greenstein, 2012; Pauw, 2015). Because of the importance of these competencies, researchers have studied how they can be developed in school (Besnoy et al., 2015; Delgado et al., 2015; Kuisma, 2017).

This chapter includes a description of the literature search strategy I used for this review, followed by a discussion of the theoretical framework and the conceptual framework I designed for this study. Subsequently, I review studies on the impact of using ICT in education and the development of 21st-century competencies, and then review research about critical literacy and critical democracy primarily in middle school. Finally, I present a summary of the literature review findings and conclusions, highlighting the gaps that I addressed in this study.

Literature Search Strategy

I conducted a thorough inquiry of research published in the past 5 years in peer-reviewed journals about education. The databases I searched included Education Source, ScienceDirect, SAGE Journals, Taylor & Francis Online, and ProQuest Central. From all of them, Education Source retrieved the highest number of relevant articles, so I conducted a search in that database both in English and Spanish to gather perspectives not only from the United States but from other parts of the world as well. I complemented the search by using Google Scholar to locate articles using the same keywords I used in the databases. The keywords and phrases used in the search included

information and communication technology, ICT, digital media, multimodality, multimodal literacy, critical literacy, 21st-century competencies, 21st-century skills, citizenship skills, critical democracy, social justice, social change, civic engagement, social studies, and *middle school*.

Initially, a combination of terms such as *information and communication technology, middle school, 21st-century skills,* and *critical literacy* did not retrieve any article in Education Source and only four in ProQuest. For that reason, I expanded the search by allowing the database to search within full text and use related words and equivalent subjects. If the combination of keywords, like *critical democracy* and *middle school,* retrieved a reduced number of articles, I opened the search to allow for earlier studies. Also, it was necessary to group the terms by subtopics to retrieve more information. I divided the search by the following subtopics.

1. Critical literacy, for which I used *critical literacy, multimodal literacy, social change, social justice, social studies,* and *middle school*.
2. Information and communication technology, for which I used *information and communication technology, ICT, digital media, social studies,* and *middle school.*
3. 21st-century competencies, using *21st-century competencies, 21st-century skills, ICT, social studies,* and *middle school*.
4. Critical democracy, using *critical democracy, social justice, citizenship skills, social studies,* and *middle school*.

It was notable that the search with the least results in all databases was the combination of *21st-century skills, middle school, ICT,* and *social justice* showing a possible initial gap in the literature. I also conducted a search in Spanish trying to locate studies in other countries that could enrich my investigation. I used the same strategy to search by subtopics for which I used the following terms:

1. For critical literacy, *alfabetización crítica, discursos multimodales, cambio social, justicia social, estudios sociales,* and *escuela*.
2. For information and communication technology, *tecnologías de la información y la comunicación, TIC, estudios sociales,* and *escuela*.
3. For 21st-century competencies, *destrezas del siglo 21, competencias del siglo 21, justicia social, estudios sociales,* and *escuela*.
4. For critical democracy, *democracia crítica, justicia social, estudios sociales,* and *escuela*.

Theoretical Framework

The critical pedagogy and critical democracy theories guided this study. Dewey (1916/2011) described the importance of democratic education in democratic societies, and Freire (1970/2000) argued for a transformational education that could overcome inequities. Goodman (2012), in a qualitative study of an elementary school, widened the concept of critical democracy by explaining how schools are essential in furthering democratic practices, leading to civic engagement and social transformation. Goodman emphasized how democratic values should be represented in the school's structure, the curriculum, and its daily interactions. These critical theories were used as the main

theoretical framework of this study. However, the constantly evolving reality of the 21st-century requires that learners have the necessary competencies to be life-long learners within multicultural environments (Cabiness, Donovan, & Green, 2013; Castro, 2014; Greenstein, 2012). For that reason, I also included the competency-based education theory.

Critical Pedagogy

The roots of critical pedagogy can be traced back to the teachings of John Dewey at the beginning of the twentieth century and then later to Paulo Freire (Darder, Baltodano, & Torres, 2017). The concept of critical pedagogy was then expanded by educators and scholars like Henry Giroux, Donaldo Macedo, Peter McLaren, and Maxine Greene, constituting a theoretical movement of praxis-reflection (Darder et al., 2017). Critical pedagogy advocates for an education of analysis and critical evaluation of reality in light of the relationships that knowledge, authority, and power exercise in educational processes while encouraging learners to act against social injustice (Freire, 2004; Giroux, 2013).

Critical pedagogy is committed to sustaining educational environments in which marginalized students are empowered (Darder et al., 2017). Theory and practice mutually nurture each other creating a continuous process of reflection, dialogue, and social action. The process facilitates the students' conscientization, which means the awareness of social inequities and the discovering of the capacities to overcome them (Darder et al., 2017). From the dynamics that take place in the classroom to the structural organization of schooling, critical pedagogy demands a profound transformation to make

possible the democratic, humanized, and emancipatory participation of both teachers and students as agents of social change. Darder, Baltodano, and Torres argued that those efforts experienced within the school should be connected to wider collective efforts in the community (2017).

Critical Democracy

As early as 1927, Dewey criticized the individualism emphasized by classical liberalism (Rogers, 2016). Dewey argued for a democracy in which democratic principles were applied in all aspects of social and economic life while persons were able to develop their full individual potential in relation to the collective interest (Goodman, 1992). The majority of institutions are rarely democratic spaces, and neither schools nor workplaces are democratic (Goodman, 1992). The fulfillment of democracy has been limited to voting and has been confined to political institutions, thereby diminishing people's democratic participation. In contrast, Dewey claimed that representative government should manifest as deliberation processes among the citizens (Rogers, 2016).

In several of his works, Dewey emphasized the contradiction of defending a democratic form of government while sustaining non-democratic schooling structures (Goodman, 1992). Dewey claimed that it is necessary to define first the kind of society desired, then the kind of school needed. If the goal pursued is a democratic society, then a democratic schooling system is required. Education for critical democracy implies that democratic experiences and interactions are seen at all levels, from the structure of the school and how administrators, teachers, students, and other related actors as parents or community representatives participate in the decision processes to the content of the

curriculum itself (Goodman, 1992). In the process, both the needs of each individual and the collective needs are addressed. As Goodman (1992) said, "the dialectical tension between individuality and community" is in balance (p. 9). Within the critical democracy framework, schooling aims for the students' self-realization, but in connection with others and with the natural world.

The concept of critical democracy was developed as a concrete way of making possible the construction of such society by helping students become aware and active citizens, taking their unique individuality as a starting point with the objective of overcoming inequality and social injustice (Goodman, 1992). The curriculum promotes a vision of democracy as an active and constantly changing process in which citizens have a protagonist role (Montgomery, 2014). Both the content and the methods should reflect this vision. In that sense, critical literacy experiences are compatible with this perspective as students read critically and respond creatively toward the eradication of injustices.

Competency-Based Education

Several organizations have created models to define and describe 21st-century competencies. Some of them are the Partnership for 21st Century Skills (P21, www.p21.org, 2007), the Assessment and Teaching of 21st Century Skills project (www.atc21s.org, 2012), and the Organisation for Economic Co-Operation and Development (OECD, www.oecd.org, 2017). Rychen and Salganik (2003) defined competence "as the ability to successfully meet complex demands in a particular context through the mobilization of psychosocial prerequisites (including both cognitive and

noncognitive aspects)" (2003, p. 43). This conceptualization is demand-oriented or functional, meaning that it is focused on what the individual can achieve. The achievement could be related to a professional, social, or personal role (Rychen & Salganik, 2003) and is driven by the learner (Ananiadou & Claro, 2009).

The OECD model focuses on the individual concept of competence. It is context-dependent and recognizes that competencies comprise knowledge, cognitive and practical skills, attitudes, emotions, values, ethics, and motivation (Rychen & Salganik, 2003). Both the OECD and the P21 frameworks are based on an interdisciplinary perspective and theorization. The OECD framework categorizes the competencies by three dimensions: *information, communication,* and *ethics and social impact* (Ananiadou & Claro, 2009); all these are significant components of the learning and teaching experiences I studied in this project. As I mentioned in Chapter 1, the P21 Framework organizes the competencies into *learning and innovation skills, core subjects and 21st-century themes, life and career skills,* and *information, media, and technology skills* (P21, 2019b). The P21 model also explicitly integrates context elements such as the learning

environment, professional development, and curriculum and instruction as it is shown in Figure 3.

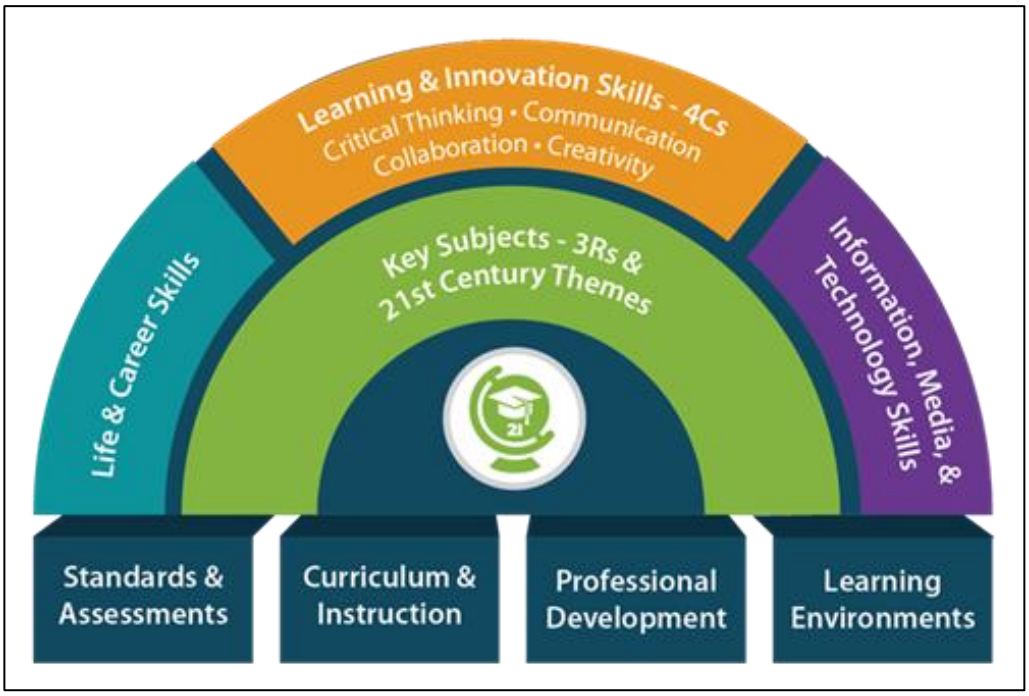


Figure 3. P21 Framework for 21st-Century Learning (P21, 2019). Used with permission of Battelle for Kids and the Partnership for 21st Century Learning. © 2019, Partnership for 21st Century Learning, a network of Battelle for Kids. All Rights Reserved.

Greenstein (2012) compiled all the competencies mentioned in all major frameworks in an extensive list and classified them into *thinking, acting,* and *living in the world.* Twenty-first-century competencies comprise knowledge, skills, and dispositions for each competency. Some of the most frequently mentioned competencies are critical thinking, creativity, communication and collaboration, use of ICT, problem-solving, metacognition, global awareness, leadership, and career readiness (Greenstein, 2012; P21, 2019b). For this dissertation, I used the P21 model as the framework to analyze the development of competencies because of its clear distinction of learning and innovation

skills (4Cs) and information, media, and technology skills (IMT) which were crucial in this study.

Conceptual Framework

The purpose of this study was to examine, in-depth, the learning and teaching experiences of two middle school teachers and their sixth-grade students to investigate how critical literacy and ICT was used to promote 21st-century competencies and critical democracy. Based in the aforementioned theories, I designed a unique conceptual framework which constitutes an innovation since some of these theories are rarely used together. The main components of the conceptual framework were critical literacy and 21st-century competencies as key elements interacting in the design and implementation of a curriculum from a teaching theoretical approach of critical pedagogy and critical democracy. As also mentioned in Chapter 1, Figure 4 shows the dynamic interaction among these conceptual elements.

The phenomenon under study was a learning and teaching experience in which critical literacy was used as the core theoretical approach for the design of language and social studies curriculum supported by the integration of ICT. Some experiences of this kind have been studied before but without considering the development of 21st-century competencies (García et al., 2015; Montgomery, 2014; Ranieri & Fabbro, 2016). The unique contribution of this framework is the integration of critical theory and the competency-based education model to analyze how students develop social engagement and 21st-century competencies through critical literacy activities.

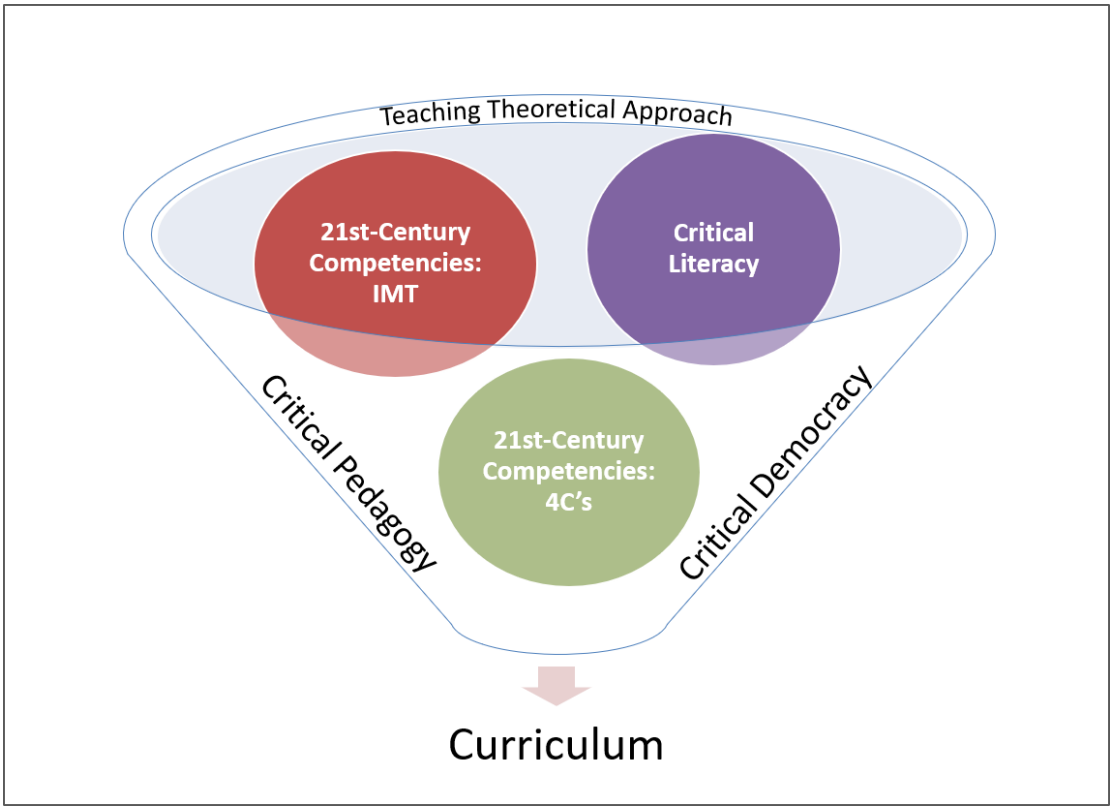


Figure 4. Conceptual framework.

Critical Literacy

Critical literacy is rooted in critical pedagogy theory, and it has the purpose to read critically and produce counter-narratives about relevant and oppressive social issues using different media (Montgomery, 2014). Critical literacy activities are designed to question the world and the status quo, to inquire about how language relates to power and how power relationships are constructed in society (Lewison et al., 2015). The ultimate purpose is to motivate students to engage in literacy actions toward social justice. Several researchers have developed models to describe critical literacy, but in this study, I used the model originally developed by Lewison, Flint, and Van Sluys (2002) and later revised by Lewison, Leland, & Harste (2015) because it was comprehensive and was the

result of analyzing and revising the other ones. This critical literacy model includes four interrelated dimensions: disrupting commonplace, interrogating multiple perspectives, focusing on sociopolitical issues, and taking action to promote social justice (Lewison et al., 2015).

Critical literacy was used to analyze the literacy learning experiences of students and how they facilitate critical thinking, creative writing, and engagement with social change. In critical literacy, literature is used to bring out social issues while writing activities promote transformational responses. Those activities can be supported by the use of ICT (Montgomery, 2014) and for the development of 21st-century competencies, but this potential has not been researched extensively.

Twenty-First-Century Competencies

The Partnership for 21st-Century Learning (P21) framework includes a Learning and Innovation Skills section that includes the competencies of critical thinking, communication, collaboration, and creativity (4Cs) and describes them as essential to achieve complex tasks in life and work environments (P21, 2019b). The P21 Framework also considers information, media, and technology skills (IMT) as crucial for the 21st-century student. Among those, the model includes skills like accessing, evaluating, using, and managing information, analyzing and creating media, and applying digital technology efficiently. The P21 model contributed to analyze how the 21st-century competencies were developed while integrating critical literacy and ICT. The competency-based education theory also guided the analysis of teaching practices in light

of performance-based assessment, which is crucial when measuring student's progress on 21st-century competencies (Parsi & Darling-Hammond, 2015).

Critical Pedagogy and Critical Democracy

Critical pedagogy principles were used to study how the general learning environment of the school, the course curriculum, and the teachers sustained critical literacy experiences and made students feel confident in expressing their thoughts. Simultaneously, the critical democracy framework helped analyze the relationships between students and teachers that support students working confidently with social issues and teachers valuing the transformational nature of the students' responses. The critical pedagogy theoretical background made possible the inclusion of the school and wider social context in the analysis and critical democracy contributed to examine how students were empowered as agents of social change in their respective institutions while they acquired a civic identity for social change (Mirra, Honoroff, Elgendy, & Pietrzak, 2016).

This conceptual framework contributed to the analysis of how the knowledge, attitudes, and skills of the 21st-century competencies were developed when combining the implementation of critical literacy strategies for social action with the use of ICT. The objective was to examine how all these concepts worked together, rather than only how effectively ICT was implemented. In this sense, ICT was crucial but still played a secondary role in teaching; it was not a goal in itself (Beeson, Journell, & Ayers, 2014; Brantley-Dias & Ertmer, 2013).

In the following sections, I synthesized the literature review findings regarding the impact of using ICT in education and the development of 21st-century competencies followed by an analysis of the impact of critical literacy and critical democracy in school. The analysis was thematic, for that reason, some studies may correspond to more than one theme.

Literature Review Related to Key Concepts

Impact of Using Information and Communication Technology

Even when studies about using ICT to support students' social action and the development of 21st-century competencies are rare, the research done about how teachers integrate ICT into the social studies curriculum and how students perceive those learning experiences enlightened the problem of this study. Researchers have studied the impact of using ICT in K-12 classrooms quantitatively through surveys (Archambault & Barnett, 2010; Area-Moreira et al., 2016; Badia, Meneses, Sergi, & Sigalés, 2015; Howard et al., 2016; Lucey et al., 2014) and quasi-experimental designs (Cener et al., 2015; Spektor-Levy & Granot-Gilat, 2012). The researchers focused the surveys on identifying the teachers' patterns in using ICT in the classroom, the frequency of the use, how it related to the teachers' personal or professional characteristics, and which factors affect the use of ICT in the classroom. In the case of quasi-experimental designs, the purpose of research was related, for example, to how using ICT had a positive impact on students' academic achievement or how classes with a ratio of one laptop per student (1:1) demonstrated higher levels of information literacy than non-1:1 groups. Mixed methods were applied for similar purposes, like to examine teachers' beliefs regarding the use of

digital technology or the types of educational technology teachers used, as well as when and how (Chávez et al., 2016; Hsu, 2016; Ruggiero & Mong, 2015; Sáez López & Ruiz Gallardo, 2014).

Qualitatively, the impact of using ICT was studied primarily through case studies (Alexander, 2014; Arancibia & Badia, 2015; Fehn & Schul, 2014; Guacaneme-Mahecha, Zambrano-Izquierdo, & Georgina Gómez-Zermeño, 2016; Hutchison & Woodward, 2014), discourse analysis (Collin & Reich, 2015), narrative inquiries (Kuisma, 2017; Turner, 2015), personal narrative (K. Smith, 2013), and action research or from an interpretive stance (Debele & Plevyak, 2013; Domingo & Marquès, 2013; Dooley, Lewis Ellison, Welch, Allen, & Bauer, 2016; Horn, 2014). These studies provided valuable information regarding teachers' and students' use of ICT, factors affecting the integration of ICT into the curriculum, students' motivation and engagement while using ICT, and elements contributing to successful ICT implementation.

Patterns in teachers' and students' use of ICT. It was found that teachers who integrated ICT more intensely were those with more professional experience (Area-Moreira et al., 2016), and the teachers' characteristics as technology users were the most influential variables when a teacher decided to integrate technology into the curriculum (Badia et al., 2015). However, the frequency or the amount of time allocated to using digital technology was not a sufficient measure of effectiveness; the integration of ICT per se did not necessarily meant that it advanced content comprehension (Beeson et al., 2014).

Researchers have done qualitative studies to inquire about the teachers' and students' patterns when using ICT for learning. Domingo and Marquès (2013), for example, documented the results of an action research study about the integration of smart boards, 1:1 laptops, and innovation in education in 10 schools in Spain in which 23 elementary teachers and 17 high school teachers participated. Researchers found that teachers used the smart board more than 25% of their teaching time and 51% of teachers used the 1:1 laptops between 25% and 50% of the time while paper documents were used 83% and textbooks 79% of the time. Also, teachers used smart boards to present information or to correct exercises (94%) and to search the Internet (88%) primarily, while students used it for presenting their work (85%), presenting information found on the Internet (79%), and for creating or using educational material (55%). Students used their 1:1 laptops mainly for creating work (79%), do exercises (72%) and searching the Internet (64%). However, authors found that students used their laptops less for creative work such as writing short stories or poems (52%), doing WebQuests (45%), creating blogs or wikis (42%), consulting peers through chat (39%), reading digital books (32%), or for collaborative work (36%).

Similar results were found regarding how students use blogs for learning purposes. Andersson and Räisänen (2014) did a case study to inquire through content analysis how students in upper secondary level in Sweden were using class blogs. They discovered that teachers used blogs narrowly, mostly for unidirectional instruction and to post supplemental material. The teachers did all the posts without inviting students to use the blogs for reflective journal writing or interactive communication among students and

teachers. Researchers have inquired about what influences the purposeful and meaningful integration of ICT in the curriculum and which are the factors that affect that process. One of the most significant findings was that teachers' beliefs about teaching and learning, their competencies regarding the use of technology, and the surrounding learning context played a crucial part (Herro, 2015).

Teacher's pedagogical beliefs and competencies. Integrating ICT purposefully and effectively depended more on the teachers' pedagogical beliefs and their curricular aims than the type of technology used (Alexander, 2014; Arancibia & Badia, 2015; Badia et al., 2015; Hsu, 2016; Truong-White & McLean, 2015). Manfra and Hammond (2008) described qualitatively the pedagogical aims of two history teachers who integrated student-made digital documentaries to the curriculum. The researchers were interested in how the teachers' pedagogical aims reflected in their teaching practices and the students' products. They concluded that one of the teachers acted as a "manager" of student learning and the other as a "facilitator" (p. 228). The "manager" viewed teaching as showing reality to students and focused on content, while the "facilitator" saw teaching as a way to "challenge students' conceptions of reality" (p. 228) and focused on fostering students' critical thinking skills. These aims reflected on students' work. While the students of the first teacher showed more a repetition of facts, the students of the second teacher made higher level connections among their prior knowledge, class notes, and their own research. As a result, the documentaries of the second group of students exceeded the teacher's intended curriculum. Manfra and Hammond concluded that the teacher's pedagogical beliefs and aims dominated over the content and the use of

technology. This finding was contrary to the statements of Mishra and Koehler (as cited in Manfra & Hammond, 2008) who argued that the integration of technology might dominate the teacher's pedagogical content knowledge.

Similarly, Arancibia and Badia (2015) studied the relationship between the general conceptions about teaching and learning with ICT of a group of 10 Chilean history teachers applying a phenomenological approach. The findings showed an alignment among teachers' frameworks about history as a discipline, teaching beliefs, and the integration of technology. The teachers who showed a critical perspective about history tended to see digital technology as a motivational and transformational tool, while teachers who had a view of history as knowing about the past statically and objectively saw the use of digital technology as a supportive tool to just access knowledge (Arancibia & Badia, 2015).

In a study with 1,048 surveyed teachers from which 111 were interviewed about the type of ICT they were using and how did they use that technology to facilitate student learning, Ruggiero and Mong (2015) found a close relationship between the teachers' daily classroom use of ICT and their pedagogical practices and beliefs. Teachers who showed strong student-centered activities using digital technology also showed student-centered practices in other learning areas. Moreover, these teachers also showed a higher urgency to design learning opportunities to cultivate 21st-century competencies with ICT. Likewise, Hsu (2016) used mixed methods to analyze the responses of 152 teachers from schools working in partnership with a university near Chicago. Hsu found that constructivist teachers had high self-efficacy beliefs about digital technology, saw the

integration of technology as valuable, and designed more activities for high-level thinking. These results confirmed the ones obtained by Ruggiero and Mong (2015). Teachers that integrated more intensely ICT to their teaching practice tended to be experienced teachers with a high self-efficacy perception about their digital competency (Area-Moreira et al., 2016; De La Paz & Hernández-Ramos, 2013; Herro, Qian, & Jacques, 2017).

In the same vein of thought, research done to measure the effectiveness of interventions to help teachers integrate ICT showed that teachers' beliefs, competencies, and context were essential for a successful implementation (Ceker & Uzunboylu, 2016; Chai et al., 2013; Hsu, 2016). It was found that educators needed better teaching proficiencies by experiencing how to use ICT in function with the content areas (Ceker & Uzunboylu, 2016; Harris & Hofer, 2011; Stewart, 2015). Moreover, in cases where the existing teaching practice did not show transformative characteristics, instead of beginning the professional development efforts by reflecting about the integration of technology, researchers recommended to begin the process with a reflection about the transformation of pedagogical practices in general before attempting to a full integration of technology (Debele & Plevyak, 2013; Hsu, 2016). In concordance, researchers have concluded that more empirical research is needed about the meaningful and effective implementation of ICT into the curriculum (Beeson et al., 2014; Fu, 2013).

Motivation and engagement. Scholars studied students' intellectual and affective engagement when using different types of ICT (Alexander, 2014; Fehn & Schul, 2014; Swan & Hofer, 2013) and found that ICT might positively impact students' self-

concept, motivation, and engagement with the subject matter (Abrams, 2013; Fehn & Schul, 2014; Herro, 2015; Shankar-Brown & Brown, 2014; Zammit, 2011). Nonetheless, in other studies it was found that there was no significant impact of ICT on students' attitudes towards social studies (Cener et al., 2015). In a qualitative case study about how engagement was manifested by a group of sixth-graders using Primary Access Storyboard to make historical inquiry, Alexander (2014) identified that students got engaged in projects using ICT for different reasons and in different ways. In this study, some students got engaged both by technology and task; Alexander proposed that these students could be challenged to higher level tasks to maintain their interest. Other students were engaged by technology but not by the task; these students would benefit from clear instructional goals. Others got engaged by the task but not by the technology; these could be candidates to accomplish the academic goal without necessarily using the specific technology presented. Finally, other students neither got engaged by technology nor the task; Alexander suggested that these students might need clear expectations and assistance with their goal settings, time management, or other factors affecting their learning. Alexander concluded that knowing how students got engaged might helped teachers to be more effective in their planning and implementation of the curriculum to support students' needs.

Through the quantitative analysis of a survey, Howard et al. (2016) identified the different patterns that existed among key factors related to how high school students in Australia experienced the integration of digital technology. These researchers used data mining techniques and found a significant relationship among students' learning beliefs,

learning preferences, and ICT engagement. A stronger relationship was detected between ICT engagement and computer efficacy when students had positive engagement, and between school engagement and ICT engagement when school engagement was negative. The most important factors for students who showed positive ICT engagement were computer efficacy in processing and creating tasks. The researchers concluded that negative feelings toward using ICT or too challenging tasks might influence negative school engagement.

Cener et al. (2015) conducted a quasi-experimental study in Turkey to see the effect of using ICT on sixth-grade students' academic achievement in social studies and their attitudes toward the subject. Regression analysis showed that students' prior knowledge (measured by a pre-test) and learning methods like using ICT were the factors that affected students' achievement positively. However, using ICT did not have a significant effect on students' attitudes towards social studies. These authors suggested further research regarding the use of ICT and its effects on students' attitudes toward social studies, especially using qualitative methods, a recommendation also done by Howard, Ma, and Yang (2016).

Using ICT may increase motivation, especially when the topic is relevant to the students (Sáez López & Ruiz Gallardo, 2014). In this study, students met students from other countries and shared information virtually to know each other cultures better. It was noted that both affective and intellectual engagement seemed relevant for the learning process. Stewart (2015) critically reviewed some of the most prominent qualitative studies done regarding the use of social media for learning purposes and found

that many of the studies focused on how students felt while using social media and did not pay much attention to what they learned by using them. In other studies, both aspects have been addressed, like in K. Smith (2013) and Gibson (2017) in which seventh- and eighth-grade students from a suburban school in Ohio in the first case and students from an American private school in Guadalajara, Mexico in the second case engaged with the critical pedagogy process designed by their teachers. These students went far beyond of the courses' requirements because they felt that what they were doing was important and could have an impact outside their schoolwork. However, opposite results were documented by an action research done at a school in the Midwest of the United States, in which a group of eighth-grade students did not feel engaged with critical democracy projects initially because they could not foresee real possibilities of change (Horn, 2014). Knowledge construction and understanding of concepts are possible through ICT (Swan & Hofer, 2013), but it necessitates a purposeful, strategic, student-centered, and judicious use of ICT focused on intellectual engagement and not only on affective engagement (Harris & Hofer, 2011).

The assumption that the integration of technology by itself creates meaningful changes in students' achievement and engagement levels contrasts the results found by Alexander (2014), Arancibia and Badia (2015), Cener et al. (2015), Hammond and Manfra (2009), Harris and Hofer (2011), and Howard et al. (2016). All these studies showed how the teacher's practices and the students' agency and perceptions were more important factors for an effective ICT integration than the technology itself. The literature related to the impact of using ICT in the classroom tends to show a need for

more resources, examples, and further research regarding the integration of ICT (Chai et al., 2013). Having a teacher integrating ICT does not necessarily mean that it is done effectively and that it is supporting content comprehension, and the amount of time using technology is not a sufficient measure of effectiveness (Beeson et al., 2014). It is necessary to deepen the assessment and evaluate how the use of ICT aligns with the teacher's objectives and facilitates the understanding of content (Beeson et al., 2014). In summary, the use of ICT will not make the teaching and learning deeper; only the teacher's aims and goals for students will make that happen (Hammond & Manfra, 2009). That is why this study aimed to describe the teaching experiences of two middle school teachers as exemplars of a transformative and meaningful teaching practice.

21st-Century Competencies

The Organisation for Economic Co-operation and Development (OECD) analyzed the results of the Program for International Student Assessment (PISA) for the year 2012 and found that 96% of 15-year-old students in OECD countries had a computer at home but only 72% used computers at school (OECD, 2015). The report showed that students that moderately used computers at school performed better on the PISA test than those that used them rarely. However, the students that used computers very frequently performed worse. OECD researchers concluded that one possible explanation could be that 21st-century technologies are still being used applying 20th-century teaching pedagogies.

Researchers have studied pre-service and in-service teachers' perceptions about teaching 21st-century competencies, how inquiry-based learning may promote 21st-

century competencies, and how the skills could be assessed. Other studies have concentrated in studying how specific teaching practices support the improvement of the skills. The following sections synthesize these findings.

Teachers' perceptions about teaching 21st-century competencies.

Researchers have studied teachers' perceptions about teaching 21st-century competencies. For such purpose, Jia, Oh, Sibuma, LaBanca, and Lorentson (2016) created a scale to measure both pre-service and in-service teachers' perceptions of their capabilities to teach 21st-century competencies. These researchers concluded that separate scales should be used with each group and since some of the skills are closely intertwined, they should be grouped into a few broad categories. This study applied rigorous statistics, and one of the results was the elimination of the construct of responsible citizenship. However, it is important to notice that only STEM (Science, Technology, Engineering, and Math) in-service teachers were included in the sample.

R. D. Smith (2014) conducted a mixed methods study with 16 recently-graduated teachers and found that all participants considered the following skills as important or very important: selecting sources, using technology, analyzing/synthesizing information, displaying information, and collaboration. Over 75% of participants indicated that multimedia such as blogs, digital images, podcasts, and video were important as well as smartboards, online mapping software, or polling software, but that they did not feel confident using them for teaching. Finally, two teacher educators did a self-study to analyze how their western and eastern teaching styles promoted students' 21st-century competencies (J. Smith & Hu, 2013). They found that western perspectives promote

critical thinking, communication, collaboration, and creativity and eastern perspectives contribute to personalized instruction. They concluded that both perspectives encouraged the integration of technology.

Inquiry-based learning. Researchers have found that inquiry-based learning experiences may promote 21st-century competencies. Wan Husin et al. (2016) concluded that students' digital age literacy, inventive thinking, effective communication, and spiritual values increased by the implementation of inquiry-based activities in a quasi-experimental study based on an adaptation of the enGauge's model to the Malaysian context. In other studies, a combination of ICT and a project-based learning approach helped students improve their digital skills, information processing, and teamwork (Cabiness et al., 2013; Chávez et al., 2016). Results from a mixed-methods study showed that both students with and without disabilities improved their factual learning, their ability to think in context, and their historical reasoning after an inquiry-based multimedia unit (De La Paz & Hernández-Ramos, 2013).

Researchers have found that inquiry-based learning can also be used for the advancement of literacy, citizenship, and other 21st-century competencies. Using mixed methods, Bocci (2016) studied how the implementation of a Youth Participatory Action Research (YPAR) in a Spanish for Native Speakers high school course helped students expand their communication skills. Students self-assessed their skills using LinguaFolio, an online e-portfolio, as a complement of the teacher's assessment. After the research project, almost all students had assessment scores above course-level. However, even when 21st-century competencies were mentioned in the theoretical framework of the

study, they were not included in the analysis at the same level as the language skills. An opposite case is found in González Robles, Figarella García, and Soto Sonera (2016) who analyzed both the students' gains in literacy and their citizenship skills during a problem-based learning (PBL) unit. These researchers found that PBL and critical literacy can be useful to improving third-grade students' citizenship competencies in Puerto Rico, but this experience did not include the integration of ICT. Other researchers have analyzed how inquiry-based learning may promote specific competencies. Studies of specific competencies are considered below.

Digital literacy. Digital literacy can be integrated into any subject at school. Kimbell-Lopez, Cummins, and Manning (2016) studied how seventh- and eighth-grade students improved their writing skills and their knowledge regarding the writing process by using a variety of digital media. Mathews (2016) examined how sixth-graders from Florida, USA, and eighth-graders from Jamaica used storyboarding to organize their research to produce effective movies regarding the problems of their communities. Students found that digital media helped them express their concerns while they learned about doing research and using digital tools.

Higher-order thinking or critical thinking. Class blogs and wikis can boost students' higher-order thinking skills. Baldino (2014) qualitatively studied how a class blog promoted students' higher-order and critical thinking by inviting students to find solutions to difficult questions or issues. Students learned to sustain arguments with facts and to disagree respectfully while creating "respected digital identities" (p. 33). In another case study, Cabiness et al. (2013) examined the use of wikis as part of an inquiry-

based project to apply historical analysis skills. In this case, a group of 7th graders chose higher-order thinking questions over lower-order questions in their discussion threads, and students that commonly did not participate in class participated in the online discussions.

Collaboration. Many inquiry-based experiences studied included elements of collaboration (Cabiness et al., 2013; González Robles et al., 2016; Mathews, 2016). For example, students collaborated as part of their projects using wikis or class blogs (Baldino, 2014; Cabiness et al., 2013), by helping each other in writing projects (Kimbell-Lopez et al., 2016), or by working sub-projects in groups and producing collective products (Bocci, 2016; González Robles et al., 2016). Collaborative learning tools facilitated the interactions among students that permitted a further growth of their collaboration skills in alignment with the 21st-century competencies approach.

Global awareness. Diverse inquiry-based and authentic learning projects have demonstrated to be useful tools to advance students' global awareness. Authentic literacy activities can be used as a starting point to widen the awareness and empathy toward international contexts and different social conditions (Sarker & Shearer, 2013). Other experiences, such as cultural exchange programs, can also help students increase their global awareness and appreciation of diverse cultures (Besnoy et al., 2015; Mathews, 2016). In Besnoy's mixed methods study, findings revealed that students from the United States expanded their appreciation for other cultures through direct social interaction with visiting students from Ukraine, Poland, Germany, and the Netherlands. In Mathews' case study, students interacted virtually as part of an inquiry-based project

about community problems. Even when these students did not develop a deep global awareness in terms of oppressive structural issues, at least they could acquire awareness of local problems and an understanding that similar situations occur in other parts of the world.

Citizenship competencies. Even when, theoretically, citizenship competencies are recognized as essential (P21, 2019b), promoting them at school is not always a priority. DiCicco (2016) examined the effort of a school wanting to create a global civics education program for social justice while responding to national Common Core standards. Even when the researchers considered both goals to be ideal, the school ended with a more superficial integration of Global Citizenship Education (GCE) due to the pressure of state and federal standardized requirements.

A different scenario was described by González Robles et al. (2016) in which both critical literacy and citizenship competencies were equally supported due to a more flexible curriculum structure. In this case, third-grade students were able to use personal and cultural resources for their critical literacy development while inquiring was the attribute most frequently observed related to the development of citizenship competency (González Robles et al., 2016). These third-graders responded with actions regarding the problems affecting their community by writing a press release while others suggested using the radio to express their thoughts. In the case of the students from Jamaica and Florida mentioned in the previous section, they investigated the conditions of the public park bathrooms, littering around school and community, animal problems, road conditions, abuses (physical, mental, and sexual), violence, and lack of security. Students

created videos and songs to share with the community and find solutions to their problems. Students in all these cases expanded their citizenship competencies by actively responding to their community's problems through inquiry-based learning projects.

Assessment of 21st-century competencies. In this literature review, it was found that 21st-century competencies were mentioned as part of the theoretical framework in many of the studies analyzed but later in the discussion of results, the competencies were not fully addressed (Bocci, 2016; De La Paz & Hernández-Ramos, 2013). In a study, a teacher expressed that 21st-century competencies were important but that they did not know how to demonstrate that their students were proficient on them (Hutchison & Woodward, 2014). In this sense, Boyacı and Atalay (2016) created a Likert-type tool for the assessment of 21st-century learning and innovation skills in elementary school. The scale measures creativity and innovation, critical thinking and problem solving, cooperation and communication. However, even this scale was not related to authentic learning experiences. After completing a comprehensive literature review, Pérez-Sanagustín et al. (2017) concluded that more research is needed regarding the assessment of 21st-century competencies.

Finally, Wright and Lee's (2014) multiple case study showed how the International Baccalaureate (IB) Diploma Program (equivalent to high school) influenced the fostering of 21st-century skills in China. Based on semi-structured interviews with different stakeholders like administrators, teachers, and students, these researchers discovered that the high schools allowed for students' choice and empowerment and the curriculum promoted critical thinking over memorization of facts. Interviewees reported

that the Core Requirements of the program highly provided opportunities for the improvement of 21st-century competencies, such as through service-based learning projects, writing an extended essay, discussions about epistemological issues, and debates. However, there is a gap regarding how these learning opportunities are experienced in IB middle schools. This study is intended to contribute to this gap by studying how critical literacy and ICT are used to foster 21st-century competencies and critical democracy in a public IB middle school with a high percent of low-income and minority students.

Critical Literacy

Critical literacy experiences have been studied through different qualitative approaches like ethnography (Albers & Frederick, 2013); autoethnography (Applegate, 2013); ethnography of communication and visual sociology (García et al., 2015); case study (Burke & Hardware, 2015; Dinkins & Englert, 2015; Dunkerly-Bean, Bean, & Alnajjar, 2014; Gibson, 2017); phenomenology (Busey & Russell III, 2016); discourse analysis (Collin & Reich, 2015); mixed methods (Danzak, 2012); narrative (Horn, 2015); action research (Horn, 2014; Kesler, Tinio, & Nolan, 2016; Lau, 2013; Ranieri & Fabbro, 2016) or collaborative interpretive research (Montgomery, 2014). After analyzing the research findings (Bocci, 2016; Burke & Hardware, 2015; Dover et al., 2016; Honeyford, 2014; Johnson, 2016; Riley & Crawford-Garrett, 2015) regarding the use of critical literacy in the K-12 classroom, and especially in middle school, six leading research topics emerged: teachers' experiences; academic achievement; multicultural experiences; mobilizing new identities; multiliteracy and multimodality; and motivation and

engagement. The nature of this study is an exploratory one; having all these critical literacy elements in mind was useful for the analysis of the data.

Teachers' experiences. Even in an educational era of standardized testing, social justice teachers continue searching for alternative ways of making learning relevant and transformational. Dover, Henning, and Agarwal-Rangnath (2016) created a theoretical model describing how teachers are embracing, reframing, and resisting standardization of social studies. They found that some teachers have embraced the emphasis on literacy in social studies as an opportunity to integrate critical literacy experiences and justice-oriented learning. Other teachers have integrated other literary forms such as urban hip-hop to facilitate connections between students' interests and literature (Hall, 2016; Irby, Hall, & Hill, 2013). Hall (2016) found that teachers participating in his study realized that many of the curricular constraints that teachers proclaim as obstacles for a relevant and transformational practice were more perceived than real, and they began to ask themselves how could they make hip-hop and social media fit into the Common Core curriculum. However, results were not always the expected ones. Applegate (2013) conducted an autoethnography about her internal and external struggles while using hip-hop as a teaching tool. Even when her students' engagement increased, she decided to do not return to that school the next year because of lack of assistance from the administration. This case contrasts with Wu (2014), Serriere (2014), and Hall (2016) in which teachers had strong support for culturally diverse learning experiences, and the administration envisioned students as social change agents.

Academic achievement. Other researchers have studied the academic achievement of students while participating in critical literacy learning experiences. It was found that students improved their academic achievement in social studies (Carlin-Menter, 2013; Gaston et al., 2016), learned to write persuasive letters (Danzak, 2012), or enhanced their communication skills (Bocci, 2016; Lin, Lawrence, Snow, & Taylor, 2016) by integrating literacy strategies and inquiry. Students who blogged in class increased their confidence, interpreted texts in multiple ways, and became critical thinkers (Myers, 2014). However, beyond the academic accomplishments that are possible with critical literacy, most of the research found in this literature review has been about multicultural experiences with minority groups and very few refer to the development of 21st-century competencies.

Multicultural experiences. Researchers have analyzed how socioculturally situated critical literacy experiences may benefit students who struggle with literacy, especially students from minority groups. Critical dialogue about immigration stories has become the foundation for the production of counter-stories about dominant discourse (Gibson, 2017; Johnson, 2016; M. A. Lewis, 2014). Ethnic studies for developing literacy have promoted students' learning while being responsive to the community's needs (Curammeng et al., 2016). Researchers have found how students cultivated self-confidence and conscientization when family-related, ethnic, and multicultural identity issues were valued and the students' everyday realities, like racism, poverty, violence, and religious or gender discrimination became an essential part of the curriculum (Albers & Frederick, 2013; Dinkins & Englert, 2015; Hayik, 2015; Stevenson & Beck, 2016).

Mobilizing new identities. Critical literacy has demonstrated itself a powerful tool both for community and self-transformation. Some researchers have studied how students acquired new identities and transformed their school spaces by creating self-representations with images, captions, and drama (Honeyford, 2014; 2013; J. Hughes & Morrison, 2014). Similarly, Greene (2016) and Norris (2014) explored how female students changed their conceptualizations about themselves after critically analyzing diverse media messages and produced their counter-narratives and digital representations about self in transformative and powerful ways. Some of these multicultural and identity-related experiences have been strengthened by multiliteracy and multimodality activities as described above.

Multiliteracy and multimodality. Media education activities enabled students' critical understanding of media and the identification of discriminatory media messages (Ranieri & Fabbro, 2016) when it was intentionally planned in the curriculum (Burke & Hardware, 2015). Kesler, Tinio, and Nolan (2016) obtained similar results by investigating a group of eighth-grade special education students that became critical readers of popular culture websites. As mentioned previously, multiliteracy and multimodality have also been studied in the context of culturally responsive experiences. Burke and Hardware (2015) found that a multimodal learning experience of creating photostories let middle school immigrant students in Canada show comprehension and multiple perspectives while critically framing the content they used. Beyond being merely consumers of information, this experience encouraged students in becoming meaning-makers. Similar research results about critical reading and production of texts

were found in the works of Albers and Frederick (2013) and Montgomery (2014). In the first case, it was found that multimodality was one of the elements influencing the success of two Latinx teachers; and in the second, students were able to critically read books and produce podcasts expressing their thoughts about social injustices.

Researchers have also studied the use of hip-hop for critical literacy learning. Applegate (2013) found that students struggling at school responded positively to hip-hop as a bridge to connect with other literary forms such as poetry, and Greene (2016) documented the experience of identity transformation of female teenagers participating in an online street literature book club framed on hip-hop feminism. Teachers have used hip-hop combined with participatory action research in middle school extended-day programs to help students reflect upon their lives, school, and community (Turner, Hayes, & Way, 2013). In all these studies, students showed a high level of engagement while implementing the different literacy projects.

Motivation and engagement. Like ICT research, critical literacy research has shown how students got engaged when writing for an authentic audience (Stover, Kissel, Wood, & Putman, 2015) and a valuable purpose (Danzak, 2012). Curammeng et al. (2016) found positive results when the topics addressed by critical literacy activities were relevant, profound, and about issues that mattered to the students. Also, students exhibited higher motivation to learn when they had some control of their learning, such as selecting what to read (Curammeng et al., 2016), making digital reader responses (Myers, 2014), or implementing youth participatory action research for the development of a second language (Bocci, 2016). Experiences in which student could feel that they

were contributing to a greater good also impacted their level of engagement positively as is described in the next section.

Critical Democracy

Education for critical democracy refers to pertinent and purposeful learning experiences with transformative implications that could be personal, collective, or both. When democracy is seen as a way of life, its exercise in educational contexts should include the empowerment of teachers, teaching for democratic citizenship, and the creation of democratic classrooms in which students' participation is valued (Kincheloe, 1999). Zyngier (2013) explained that binary discourses about democracy describe it as thin versus thick or weak versus strong, showing the representative versus participatory character of exercising democracy. In education, binary discourses about democracy can be translated to teaching about democracy versus teaching for democracy. However, the concept of democracy is even more complex, and a spectrum of experiences can be described beyond a binary representation going from those that show mostly the representative character of democracy to the most participatory ones (Zyngier, 2013).

Qualitative, quantitative, and mixed methods have been used to study learning experiences related to the development of democratic values mainly in civics and social studies courses. First, research was found about the perceptions of teachers, pre-service teachers, and other educators regarding teaching for social justice and the relationship between democracy and education (Castro, 2014; Zyngier, 2013, 2016). Second, research reported on experiences promoting civic engagement both inside and outside of school (Conner & Slattery, 2014; Epstein, 2013; Henning, 2013). Finally, I examined

evaluation research of civics, literacy, or social studies programs for civic engagement like Bridges to Understanding (Truong-White & McLean, 2015), the International Book-Sharing Program (Camardese & Peled, 2013), or eLECTIONS (Moore, Beshke, & Bohan, 2014). In many of these cases, critical democracy experiences were present even when they were not described specifically as such. Following the thematic organization of this review, the subsequent subtopics are discussed: citizenship education, teaching for critical thinking, democratic classrooms, and teaching for social justice.

Citizenship education. As explained previously in the section about the impact of ICT use, the teachers' pedagogical beliefs and competencies are crucial, not only to define how the technology is integrated into the curriculum but also for the kind of citizenship education that will be experienced by students. Pre-service teachers in Australia defined democracy in a thin way affecting the way they teach about democracy but not for democracy. Most teachers (85%) mentioned concepts like voting, elections, or individual rights as essential for democracy but just a 5% highlighted difference or social justice as part of democracy (Zyngier, 2016). Sixty-five percent (65%) mentioned "freedom and right to choose" as the essence of democracy, and only 30% mentioned concepts like equality, equity, or fairness (Zyngier, 2016). Similar results were found in other international samples using the same research protocol, especially in Argentina (Zyngier, Traverso, & Murriello, 2015).

Many citizenship education programs include role-playing of democracy or pretend parliaments like the Model United Nations. Those programs are designed for the expansion of leadership skills or the pretend participation in elections, but they are

detached from the students' daily reality (Levy, 2016; Moore et al., 2014). For example, Levy (2016) studied how advisors facilitated high school students' participation and political engagement in an extracurricular Model United Nations club. Levy found that advisors supported students in knowing about international issues, political strategies and skills, research and organizational management skills. Nevertheless, the critical perspective of the issues was not clear, and students did not engage in issues within their communities or school environment. Moore et al., (2014) studied the use of elections simulation software in which students learned how the United States Electoral College functions, but using the software was not linked to any real election process. These examples contrasted with other experiences in which students, with their teachers' aid, took action regarding real problems at school (Serriere, 2014). Citizenship education based on the study of foreign issues, as the Model United Nations, may help students increase their leadership skills; though, Truong-White and McLean (2015) noted how global education can raise awareness about "distant others" (p. 4) while ignoring local issues. In this sense, DiCicco (2016) concluded that many of the global citizenship education efforts are narrowly aimed to improve students' skills to fulfill the needs of neoliberal economic competition among nations instead of holistically empowering students to be citizens for social change.

Critical thinking. Research findings show that citizenship education and social studies can sustain the development of critical thinking. In the case of school students, researchers studied the experience of a group of middle schoolers describing and illustrating the concept of citizenship using multimodal texts and media and found that

their multimodal expressions showed deeper critical thinking than their written explanations (Pellegrino, Zenkov, & Calamito, 2013). Martens and Hobbs (2015) conducted a quasi-experimental study to see the differences in media knowledge and media analysis skills of students participating in a school-based media literacy program versus students out of the program and the effect on their civic engagement. Martens and Hobbs found that the amount of time that students spent online was not a strong predictor of civic engagement while information-seeking motive showed to contribute strongly. Martens and Hobbs also found that media literacy critical analysis skills were associated with civic engagement, especially the ability to critically analyze and evaluate news demonstrating the importance of critical reading comprehension and writing skills for civic engagement.

Even when students usually showed high levels of motivation when working with real-life and relevant issues (Danzak, 2012; De La Paz & Hernández-Ramos, 2013; Mirra et al., 2016), students' responses to critical pedagogy varied. K. Smith (2013) investigated the experience of a group of seventh-graders in a technology class participating in a critical pedagogy curriculum. Some of them got involved in the learning process and critical perspective, others seemed somewhat engaged in the discussions, and others resisted the idea of thinking critically and testing personal assumptions (K. Smith, 2013). The findings of K. Smith's study exposed both positive and unexpected results; a fact that supports its trustworthiness.

Democratic classroom. Some of the issues that researchers have studied related to democracy in the classroom are the students' empowerment at school, the use of social

media as a vehicle for promoting egalitarian relationships between teachers and students, or the visualization of students as experts. Banister and Reinhart (2011) found that teachers, parents, administrators, and other community members could collaborate democratically to foster students' preparation for college education. In a study regarding the use of social media and how it promotes more egalitarian relationships between students and teachers, Bartow (2014) found seven (7) types of teacher roles: manager, instructor, learner, assessor, change agent, constructivist role, and teacher as caring. Some of those emerging roles reveal more participatory practices in which power is shared with students as a result of the use of social media and the development of safe and democratic learning environments (Abrams, 2013; Bartow, 2014; Horn, 2014, 2015).

Teaching for social justice. Researchers have studied teaching for social justice experiences in which students engaged in researching about community needs, exploring their cultural identities, students' rights as minority students, or global issues. Even when my study was about an in-school experience, results from out-of-school experiences were enlightening and informative, both regarding contents and methods. For that reason, they were included in this review. In general, researchers found that authentic projects, both in- and out-of-school, promote youth's research and literacy skills, civic engagement, civic efficacy, and passion for collaborating in community development (Conner & Slattery, 2014; Heggart, 2015; Morgan, 2016; D. E. Wright & Mahiri, 2012).

Community needs. Heggart (2015) studied how students in a 9th-grade civics course chose topics related to their lived experiences like drug and alcohol abuse, domestic violence, bullying, racism, and refugees for making film productions for a

community film festival. Students expressed through interviews that during the project they perceived themselves as active citizens, and shared about their plans to continue being socially active with some of the community organization they got into contact during the project or to participate in the students' council at school (Heggart, 2015). Another example of an in-school experience was a group of Christian and Muslim students in Galilee, Israel, reflecting on religious differences in their English as a Foreign Language class (Hayik, 2015). The experience resulted in considering multiple views about an authentic socio-political issue with highly sensitive connotations. In response, students shared their powerful thoughts with the community by peacefully standing in their village's main street openly holding posters about religious tolerance.

In other studies about out-of-school projects with middle and high school students doing research about authentic community problems, students highlighted in the interviews how they improved their literacy skills, self-confidence (D. E. Wright & Mahiri, 2012), and interpersonal, communication, and critical social analysis skills by publishing their public journalism work in YouTube (Conner & Slattery, 2014) and by participating in debates (Mirra et al., 2016). However, not all experiences necessarily had an impact on the wide community; the transformation could be a personal one as it was shown in Hall (2016).

Hall (2016) did a collaborative self-study to inquire about how hip-hop pedagogies and literacies could contribute to the exploration of the genre of poetry by a group of middle schoolers. Students brought stories about verbal and physical abuse, foster care experiences, death and loss without supporting counseling at school because

of fiscal cuts, labeling and profiling, or being a victim of police brutality. Through writing hip-hop poems, students used literacy as a healing process. "For novices and lower-achieving students who never imagined letting anyone near their notebooks, let alone their hearts, the mere act of public disclosure was therapeutic" (Hall, 2016, p. 405).

Exploring cultural identities. Wu (2014) found that a school's progressive approach to teaching about diversity positively impacted minority students' identification with their heritage cultures and their academic achievements. Similarly, Tucker-Raymond, Rosario-Ramos, and Rosario (2011) studied the artistic products of middle school and high school students as resistance expressions against gentrification, racism, and political and economic injustice as a way to preserve the community's cultural identity. Students reflected on their personal and collective experiences and denounced inequality through poetry. Finally, Schmier (2014) investigated how using students' daily communication tools like social media may have a transformational impact on students' identity as authors and in their personal goals.

Students' rights as minority students. School constitutes one of the closest environments in which youth can develop leadership regarding their rights, and how students understand their digital rights is essential to active citizenship (Garcia, Agustin, Seguro, & Garcia, 2012). In a study about students using video productions tools and a weekly blog to invite a wider public to get interested in the school issues and comment on their work, participatory media was found to be a powerful medium to promote civic dialogue between students and the community (García et al., 2015). However, for students to exhibit this level of commitment required the teachers' assistance. Serriere

(2014) studied the role of a teacher in scaffolding her elementary school students' civic efficacy. Among the students, six fifth-grade girls worked together to make the district change the school lunch policy to include a larger variety of salads to fulfill the vegetarian and lactose-free needs of students. One of the students concluded that "we all have rights and we . . . if we want to change something, we have to stick up for each other . . . It's like, fight for your rights" (p. 51).

Critical literacy experiences and the development of 21st-century competencies can contribute to highlight the rights of minority students to a dignified life and to have the same opportunities as their counterpart non-minority students as an act of social justice. Banister and Reinhart (2011), Chang (2013), and Turner (2015) researched how encouraging students to develop soft skills helped them graduate from high school and considered higher education, while Conner (2014) studied how those essential skills remained over time. Other significant aspects to be considered when supporting minority students is the way that educators visualize this population and how students comprehend their oppressive situation (Albers & Frederick, 2013; Lau, 2013; Stevenson & Beck, 2016). Stevenson and Beck qualitatively studied how a socio-culturally responsive critical literacy program enabled the emergent conscientization of twelve 10-to-12-year-old children of migrant farmworkers about their situation as migrants. Lau (2013) found that beginning English learners, in addition to strenghtening literacy skills, developed a higher sense of efficacy for social change while preparing picture stories, photo stories, poems, and expository and media texts about their realities as immigrants. Through their

work, these students caused a transformation in the way their other teachers saw immigrant students.

Global issues. Using literacy learning experiences for critical democracy has also been studied in relation to global issues. Dunkerly-Bean et al. (2014) studied how human rights education and cosmopolitan critical literacy was used as a framework for the students' analysis of global issues through a multimodal project. Students composed screenplays and iMovies about poverty, war, oppression, and deportation based on their readings, media research, and personal lived experiences resulting in a connection of the global and local. In the case of the evaluation of the digital storytelling program, Bridges to Understanding (Truong-White & McLean, 2015), the researchers found that students could share information with students from other countries about climate change while creating a global collaboration experience (Truong-White & McLean, 2015). Students were able to make connections among racism, gentrification, and economic oppression, and to respond to those realities by producing counter-narratives of new possibilities regarding themselves, their home place, and even wider contexts (Danzak, 2012; Knieling, 2016; Tucker-Raymond & Rosario, 2017). In Danzak's study, students decided to write to a major supermarket trying to persuade the owners to sign a fair food agreement after researching about unjust farmworkers' labor conditions. In Knieling's case study, middle school students made connections between the novel *Bud, not Buddy* and the Flint water crisis in Michigan. Knieling found that, in addition to the critical literacy experiences, the teacher expressed that many behavioral issues significantly decreased when students were engaged with relevant and authentic learning.

Critical democracy was visible in these cases through the improvement of the student's literacy and communication skills as a form of social empowerment, the assessment of the community's and personal needs, and by responding actively to the authentic issues studied by students. Preparing presentations and digital products motivated students to further expand their literacy skills because their writings, either represented in posters, YouTube videos, speeches, debate arguments, hip-hop songs, or as script on films, would be shared with an authentic public (Hayik, 2015; Heggart, 2015; Mirra et al., 2016; D. E. Wright & Mahiri, 2012). Simultaneously, the act of presenting their research work to a wider audience empowered the students as social change agents while engaging in critical, participatory democracy.

Summary and Conclusions

Using critical literacy and ICT in social studies or language arts classrooms to promote 21st-century competencies and critical democracy is an under-researched area of study (Kingsley, 2010; Montgomery, 2014). When searching in the literature about 21st-century skills or the integration of ICT in the classroom, very little research is found regarding assuming a critical perspective about reality and its transformation. Researchers have studied 21st-century competencies, the use of ICT, or inquiry-based learning in science or math classrooms mainly (Jia et al., 2016; Wan Husin et al., 2016; Wang et al., 2014), leaving a gap regarding how these competencies can be promoted in social studies or language arts (Chai et al., 2013).

Studies about using ICT or 21st-century competencies in social studies classrooms usually have been done about geography or history content-related skills and

less frequently about the students' social engagement or participation in society (Alexander, 2014; Beriswill, Bracey, Sherman-Morris, Huang, & Lee, 2016; De La Paz & Hernández-Ramos, 2013; Hong, 2014; Kuisma, 2017; Radinsky, Hospelhorn, Melendez, Riel, & Washington, 2014). Research is available about critical literacy that integrates social justice issues or social action elements (García et al., 2015; Horn, 2014; Montgomery, 2014; Ranieri & Fabbro, 2016; Tucker-Raymond & Rosario, 2017), but many of them do not consider the use of ICT (Horn, 2014) or the 21st-century competencies (García et al., 2015; Montgomery, 2014; Ranieri & Fabbro, 2016). There is a gap regarding how critical literacy can promote the advancement of 21st-century competencies, even when critical thinking is one of them. This study aims to contribute to fill this gap and extend knowledge in the discipline by examining how a middle school group of students develop 21st-century competencies while participating of critical literacy learning experiences.

On the other hand, researchers have studied the use of ICT and the advancement of 21st-century competencies (Dooley et al., 2016; Kuisma, 2017), but they have not included the development of students as social agents (Chávez et al., 2016; Kuisma, 2017; Sáez López & Ruiz Gallardo, 2014; Schul, 2010; Spektor-Levy & Granot-Gilat, 2012; Swan & Hofer, 2013) or when it has been mentioned, it has been done vaguely without becoming the topic an important part of the study as it happened in Dooley et al. (2016). Also, researchers have found that more current and global perspectives are needed in the social studies curriculum in middle school (Busey & Russell III, 2016) but many studies about 21st-century competencies did not refer to real-world situations.

Even when this is not an exhaustive review, it is comprehensive enough to conclude that many critical literacy studies commonly include social action but not 21st-century competencies, and ICT studies may include 21st-century competencies but rarely social action.

Regarding the participants, both the voices of students as well as the perceptions of teachers are needed to obtain a holistic perspective of using ICT and critical literacy in middle school classrooms for the advancement of 21st-century competencies and critical democracy. In the literature review done by Pérez-Sanagustín et al. (2017) about the use of ICT in K-12 schools, 240 studies were done with students, 76 with teachers and only 21 studies included both students and teachers. There is a gap in terms of considering both the perspectives of teachers and students (Buchanan, Harlan, Bruce, & Edwards, 2016; Chai et al., 2013; Fu, 2013; Kingsley, 2010) and there is a need for more qualitative research including both types of participants (Delgado et al., 2015). Additionally, most of the studies done with students are limited to the collection of data through pre- and post-tests scores (Wan Husin et al., 2016) when collecting empirical data through other means regarding students' perspectives is needed (Chai et al., 2013). More research is needed reporting the students' perceptions directly instead of filtering them through the interpretations of a researcher or their teachers (Howard, Ma, & Yang, 2016). The purpose of this study was then to examine a middle-school experience in which teachers used ICT and critical literacy strategies to promote 21st-century competencies and critical democracy to contribute to the existing gap in the literature. Both the perceptions of teachers and students were considered to attain a comprehensive

understanding of the phenomenon under study. Chapter 3 includes a description of the methods applied in this study based on the qualitative research tradition.

Chapter 3: Research Method

Introduction

The purpose of this qualitative case study was to examine in-depth how two teachers and their sixth-grade students used critical literacy and information and communication technology (ICT) to promote 21st-century competencies and critical democracy. My objective was to provide an opportunity for participants to reflect on their teaching and learning practices. In this chapter, I discuss the research design and its rationale, my role as researcher, the methods I used including participant selection, instrumentation, procedures for recruitment, and the plan followed to analyze the data. I also cover how issues of trustworthiness were addressed.

Research Design and Rationale

Qualitative research is appropriate when exploring issues that have not been researched deeply. I used a case study design to analyze and describethe learning and teaching experiences of the two middle school teachers and their students while using critical literacy and ICT to promote 21st-century competencies and critical democracy. The research questions that guided this study were:

Research Question 1: What were the experiences of two middle school teachers using ICT and critical literacy to promote 21st-century competencies and critical democracy in a Midwestern public school?

Research Question 2: What were the teachers' reflections about their critical literacy teaching practices using ICT to develop 21st-century competencies and critical democracy?

Research Question 3: What were the students' reflections about their learning experiences using ICT to develop knowledge, 21st-century competencies, and critical democracy?

I selected a case study design because the purpose was to study in-depth a phenomenon in its natural setting. The case study approach is suitable when "the boundaries between phenomenon and context may not be clearly evident" (Yin, 2014, p. 16), which was the case in this study. Stake (1995) described a case as a "specific, complex, functioning thing" (p. 2), which are characteristics attributable to learning and teaching activities. Also, learning and teaching are processes that develop through time, and Merriam (2007) stated that the "case study is a particularly suitable design if you are interested in process" (Ch. 2, Case Study Defined).

Analysis of a learning and teaching experience should include the teachers' and the students' perceptions, observations of the learning experience, and teaching materials or tools used. The case study is an approach that makes possible the analysis of the perceptions of both the teachers and the students, the teaching materials as well as the students' work, and the observations of the classroom's daily interactions. All these elements enable a holistic appreciation of the phenomenon, which was the intended purpose of this dissertation. Unfortunately, observations were not possible in this case study. However, teachers provided extensive explanations of their teaching practices, which I corroborated with the students' descriptions of their learning experiences. To complete the triangulation of sources, I also analyzed artifacts to provide a complete picture of the learning and teaching experience. By using the case study design, I was

able to describe the context and population of the study, discover the extent of the experience, and analyze why the curriculum, as designed by these teachers, promoted the development of 21st-century competencies and social action.

Role of the Researcher

I have been a critical literacy teacher for more than 10 years. I have a vast knowledge developing literacy activities integrating social issues and engaging students in social action while developing the skills mandated by the school's curriculum. My professional background and knowledge of the school's context helped me comprehend the teachers' and students' experiences. However, being so passionate about teaching critical literacy for social transformation could have been a source of bias leading me to interpret the data from my ideological point of view instead of letting the results emerge by themselves. To avoid this threat, I integrated member checking to confirm my interpretations with the participants. Finally, I conducted this study at my daughter's school. However, to overcome any possible threat or bias, I studied the experience of a group of students from a grade different from my daughter's class.

Methodology

Participant Selection Logic

The target group for this study was critical literacy teachers integrating ICT with a critical democracy or social change goal and their students. I used purposeful sampling to select participants. In the case of this study, the phenomenon of interest proved to be an intrinsic case as defined by Patton (2015). For that reason, the sampling strategy of

selecting an exemplar of the phenomenon of interest was appropriate because the research approach was the study of a single significant case (Patton, 2015).

Teachers. I invited two middle school teachers who integrated digital technology and critical literacy strategies to their teaching practices to participate in the study. These two teachers co-taught the two groups of sixth graders from their middle school, interchanging literacy and social studies activities between the Language Arts and the Social Studies periods. I invited the teachers to participate in this study by email after securing permission from the school's principal to conduct the study. The school's district research office authorized the study as well. Appendix A shows the text of the invitation to the teachers. The documentation required by the school's district research office was filled out for the teachers' and students' participation, assuring the protection of their identities and integrity as research participants.

Students. The students were the participant teachers' sixth-grade students. I invited all sixth-grade parents and legal guardians at the school to participate in the study. Appendix B shows the text of the invitation to potential student participants' parents or legal guardians. All students with an informed consent form signed by their parents or legal guardians were able to provide informed assent to participate in the study. An orientation meeting was organized for parents and legal guardians to clarify questions, but no parents attended.

Instrumentation

I used a varied set of instruments to collect enough valuable data to answer all the research questions. The diverse nature of these instruments allowed for triangulation of

the data. Table 1 includes a list of the instruments I used, the research questions addressed by each instrument, the corresponding appendix in which the instrument is detailed, and its source.

Artifacts. In this case study, several types of artifacts contributed to the understanding of the phenomenon. Some examples of those artifacts were students' class work, like graphic organizers and worksheets used to organize their research in the Internet. Also, I analyzed students' products as part of their critical literacy activities, especially their graphic novels. I included teaching materials, such an infographic about human rights and the teachers' unit plans. All these artifacts were relevant to answer RQ1. A guide to analyzing those artifacts is shown in the Appendix C.

Table 1

List of Instruments

Instrument	Research question	Appendix	Source
Guide to analyze artifacts	RQ1	C	Researcher
Teachers' interview guides	RQ1, RQ2	D, E	Researcher
21st-century competencies diagram	RQ2	F	Researcher
Online discussion forums guide	RQ3	H	Researcher
Interviews transcriptions	All RQ	G	Professional service
Reflective journal	All RQ	n/a	Researcher

Teachers' interviews guides. I conducted semi-structured interviews with each of the teachers to answer RQ2. Both interviews were conducted with the purpose of gathering the teachers' reflections about their practices. The interview questions were based on the contextual dimensions identified by Chai, Koh, and Tsai (2013) when

analyzing the integration of digital technology to teaching practices. Those dimensions are:

1. The intrapersonal dimension, which refers to the epistemological and pedagogical beliefs of teachers (design literacy, flexibility, and creativity).
2. The interpersonal dimension, which refers to the collaborative nature of the instructional design.
3. Cultural/Institutional factors like school's vision, mission, and policies.
4. Physical/technological provision, which refers to the availability of technology and technical support.

A limitation of Chai et al.'s (2013) study was that they did not explain in detail these dimensions. However, they provided enough information to enrich the content of the interview questions in my study.

As a guide to formulate the questions, I used some articles related to the integration of technology in which interview questions were included in the findings report (Baser, Kopcha, & Ozden, 2016; Shamir-Inbal & Blau, 2016). I adapted some of the questions and used ideas from the interview protocols formats found. By following the recommendations offered by Patton (2015) and Jacob and Furgerson (2012), I designed open and not-leading questions that contributed to the credibility of the gathered data. The interview guide for the first interview is shown in the Appendix D, and the interview guide for the second interview is shown in the Appendix E. During the second interview, I showed the participants a printed sheet illustrating the concept of 21st-

century competencies (Appendix F) to guaranteeing that both the participants and I were referring to the same concepts, a strategy that strengthened the credibility of the answers.

Online discussion forums guide. I held four online discussion forums to gather the students' reflections about their learning experiences using ICT to develop knowledge, 21st-century competencies, and critical democracy. All student participants were invited to the online discussion forums and to share their artifacts for analysis. Appendix H shows the questions I used in the online forums.

Interviews transcriptions. I kept a record of interview audio recordings as shown in Appendix G. Audio recordings were transcribed professionally and uploaded into the qualitative data analysis software Nvivo.

Reflective journal. A substantive journal can be used as a data set to complement other data collection techniques (Janesick, 2011). I kept a daily chronological record of interpretations, hunches, ideas, reactions, and working hypotheses as part of the data collection procedures. This journal was important in refining questions during interviews, recording observations and ideas during the interviews and online forums, and identifying themes and categories during data analysis. This narrative journal was kept directly in Nvivo.

Procedures for Recruitment, Participation, and Data Collection

Recruitment. To recruit the teachers and students needed for the study, I contacted the research office of the school's district by email to gain access to the site. Once the district granted permission, the researcher invited the school's principal to grant access to the school and sign a letter of cooperation. Then, I contacted the two teachers

by email to ask about their interest in participating in the study and to provide their informed consent. The school's administrative assistant, instructed by the principal, distributed invitation letters to their students' parents by email using the school's communication system (see Appendix B) without including consent forms. The same message was also distributed by the principal using the school's Facebook page.

Neither the principal nor any school staff collected any consent or assent forms. All parents interested contacted me directly. I planned a parents' orientation meeting to explain the research purpose and data collection procedures. However, no parent or legal guardian attended. Most parents responded to the invitation by Facebook and consented digitally either by email or by messaging through Facebook. Students whose parents or guardians have provided informed consent were then invited to participate in the study. After receiving explanations of the details and objectives of the study, the students provided informed assent. No student was able to provide assent if his/her parents or guardians had not provided previous consent. Parents provided informed consents by email, Facebook, or in person and students provided informed assents in person, directly to the researcher, and before beginning the study. Any additional follow-up needed to invite parents and students to the study was done directly by the researcher, by phone, email, Facebook, or in person until enough participants were recruited. Both sixth-grade classrooms were invited to participate in the study to raise the probability of having enough students. All sixth-grade students complying with a consent form and an assent form were included in the study. Finally, 11 students were recruited, eight (8) girls and three (3) boys. From that total of 11 students, 10 students (7 girls and 3 boys)

participated in the online forums and also provided artifacts. One student (1 girl) did not participate in the online forums but provided artifacts for analysis.

Participation. As soon as informed consents and informed assents were collected, both teachers and their students began participating in the study. In the end, teachers exited the study through a debriefing meeting in which the researcher did member checking and shared initial results. A debriefing meeting was not possible with students due to schedule constraints. The researcher shared final results with the district's research office, the principal, the teachers, and the parents by email. The researcher shared final results with the students through a printed handout.

Data collection procedures. The data collection procedures did not interfere with any aspect of normal daily instruction of the students and the work of the teachers. Most of the interviews and online forum discussions occurred during non-instructional time in agreement with the teachers and the principal. The researcher interviewed the two teachers after the school year was over. The two semi-structured interviews with teachers occurred after school hours and at a convenient time for the teachers. The interviews were held at another school of the same district, where interruptions could be minimized, and privacy could be guaranteed. The interviews were audio-recorded digitally and transcribed verbatim.

The online discussion forums were set using Edmodo.com, which is a private and secured platform specially designed for schools. Most of the online discussion forums occurred during non-instructional time in agreement with the teachers. Only the last online forum occurred during school hours at a convenient time for the two students that

participated in that forum. To assure confidentiality, the researcher opened accounts for all participant students using pseudonyms and for the purpose of the study only, instead of having students or parents opening accounts by themselves. Students used pseudonyms to protect their privacy and identity. No one else had access to the students' discussion forum, nor teachers, parents, the principal, or any other person, other than the students and the researcher. Parents or legal guardians provided their authorization for the researcher to open an Edmodo account on behalf of their students in the informed consent form.

The researcher was responsible for setting up and maintaining the Edmodo platform necessary for the online forums. No one from the school system was responsible for setting up and maintaining the systems necessary for these online forums or had access to the them. The access to the discussions was controlled by the researcher, so students were able to access the forum only when the researcher opened the discussions and for the time set by the researcher. After all data were retrieved from the discussion forums and saved in Nvivo for analysis, the researcher deleted all the discussion forums and the students' accounts from the Edmodo platform. To assure confidentiality, students participated in the online discussion forums using either the school's computer lab or the classroom's devices under the supervision of the researcher, and in agreement with the teachers and the principal.

Artifacts like students' work or teaching materials were collected by the researcher as they emerged during the study. The artifacts that existed in digital format were saved directly in Nvivo. Other artifacts that existed on paper format were

photographed or scanned, depending on their size, and uploaded to Nvivo. The reflective journal was kept by the researcher in Nvivo as a narrative during the whole process of the study.

Audio recordings and scanning of documents were done directly by the researcher. No other person had access to raw data except for professional transcribers. Researcher's written notes were transferred to the researcher's computer as soon as possible, and paper documents were left at the researcher's home. All data were stored digitally in the researcher's password-protected computer for 5 years, and after five 5 years, they will be permanently deleted, and all printed documents will be shredded.

Data Analysis Plan

The purpose of studying a single significant case was to construct an in-depth, detailed, and holistic study of the case, and the analysis of the data illuminated the reasons why the case studied was significant (Patton, 2015). The unit of analysis of this study were the teaching and learning experiences. An analytical framework approach was used to organize and describe data inductively through sensitizing concepts. I applied an adapted analytic induction process to analyze the data and explain the phenomenon. Merriam (2007) describes analytic induction as the process of continuously refining the hypothesis as contradictory data emerge. The hypothesis then evolves to be consistent with data found. Even when I did not have a hypothesis per se, I had guiding assumptions regarding how the conceptual framework and the theoretical framework related to the collected data. The analytic induction approach was appropriate in this case study because a robust theoretical framework was used.

As soon as the data were collected, I organized them using the Nvivo software and began coding emergent concepts in connection with the conceptual framework. A preliminary codebook was developed and was reviewed periodically. The codebook included the codes and their descriptions as suggested by Saldaña (2016). Data that in any way contradicted the conceptual framework were presented as part of the integration of all findings.

Nvivo has several features that were convenient for this case study. For example, in Nvivo, coding can be applied to different types of sources like Word documents, pdfs, photos, or interviews. Even when data coded within the same code were located in different sources, it was possible to group and analyze all of them together using the software, as it becomes necessary when applying analytic induction. I used the software as a data management tool while keeping total control of the coding process.

Issues of Trustworthiness

Credibility

Several strategies were used to strengthen the credibility of this case study. Established methods and research design were transparent. I revealed my professional background, my knowledge, and familiarity with the context studied. I implemented known IRB protocols for inviting participants, getting their informed consent, and protecting their integrity. The semi-structured interviews were audio recorded digitally and transcribed verbatim. I implemented member checking to assure the accuracy of the data gathered. Finally, triangulation of methods, sources, and interpretation contributed to the credibility of this qualitative case study (Shenton, 2004; Toma, 2011).

For triangulation of data, Yin (2014) recommends gathering data from different sources about the same construct. In this case, I collected data from interviews, artifacts, and online discussion forums. When codes and themes emerge and are traced back to different sources, the process strengthens the credibility of the study (Yin, 2014). This set of procedures contributed to the credibility of the study meaning that the phenomenon has been represented accurately (Shenton, 2004).

Transferability

Thick descriptions of the context of the study and the procedures for data collection provided for persons in similar settings to decide if the results can be applied or are useful for their particular contexts (Shenton, 2004). I described the professional background of the participants and the school's characteristics to offer a clear picture of the setting in which the teachers developed the curriculum. The representation of the school, its culture, how teacher's innovations were encouraged or not, and how the student's projects were supported or not were important to understand better the phenomenon and portray truthful findings. The context has a role in the process of integrating technology (Mishra & Koehler, 2006), for that reason, describing the context in a case study about technological innovations was essential to assure both credibility and transferability.

Dependability

A detailed explanation of the research design and the methods applied to the collection and interpretation of data makes it possible for other researchers to replicate a study (Shenton, 2004). A detailed description of the procedures followed in this study

will help interested teachers or other educators to replicate the study or the teaching practices with confidence. The strategies to establish dependability in this study consisted of explaining how participants were recruited, describing how data were collected, divulging the data analysis plan and the instruments used, and the triangulation of sources. Also, any possible missteps in the process of recruiting participants or the process of coding data were reported along with the taken corrective measures.

Confirmability

In qualitative research, it is necessary to demonstrate that the findings emerged from the data and not from the researcher's assumptions or predispositions (Shenton, 2004). Miles and Huberman (1994) considered essential for the confirmability of a qualitative study that the researcher reveals his or her predispositions. In this study, I made transparent my professional background and interests and the role that I assumed as a researcher. Triangulation is another measure of confirmability; when data from different sources are congruent, it makes evident that the findings emerge from the data while avoiding bias. Examples were taken directly from the data, like participants' citations, which were provided extensively. Finally, I made the audit trail accessible by explaining how codes, themes, and categories emerged from the data. I also used predefined forms for taking notes and organize data and followed the same procedure when analyzing data from different sources which helped maintain an organized audit trail that could be easily retrievable.

Ethical Procedures

Walden University IRB guidelines were followed to assure the protection of the participants. Walden University's approval number for this study was 06-01-18-0313177 and it expired on May 31, 2019. Also, the procedures of the Research, Evaluation, and Assessment (REA) Department of the school's district were observed to comply with all requirements for the participation of teachers, parents, and students. The voluntary participation of the parents, the students, and the teachers was assured. No teacher, parent, or student was coerced to participate. Some parents and students decided not to participate, and their decision was respected. Before signing informed consents or informed assents, potential participants were reminded that participation was voluntary and that they should feel free to deny their participation irrespective of any pressure from peers or parents. All participants' names, school name, district name, and any other information that could lead to the identification of participants or the school site were replaced with pseudonyms. All data were kept confidential and were not shared with anyone outside the study, except for audio recordings which were transcribed by professional transcribers. No person intruded while an interview or online forum was taking place meaning that privacy was guaranteed. The researcher archived all forms, consent forms, assent forms, and any other document related to the study in a locked file. The researcher saved all collected data in her password-protected computer and backups were stored on a removable hard drive at her home for 5 years as recommended by the university guidelines. After that term, the data will be deleted from the researcher's

computer and from the backup device, and any paper document, like informed consents, assents, or any other artifact will be shredded.

There were only minimal risks related to this study. Some of those risks could be being coerced by other parents or students to participate, anxiety or distress for participating in an interview or online discussion forum, anxiety or distress concerned to privacy or how students' comments may be interpreted against the teachers' professional practice. Also, being asked about learning or teaching experiences may cause some stress or discomfort. To minimize any psychological risk related to the stress that could cause the participation in this study, the researcher reminded participants in the introduction of each interview and online discussion that the participation was voluntary, and if at any moment a participant decided to withdraw from an interview, he or she could do it without any other negative consequence. Participants were also reminded that their opinions and work would not be judged or evaluated. If any information was shared that would compromise the well-being of a student, he or she would be referred to the pertinent school's support staff. However, that was not the case.

Even when I conducted this study in my daughter's school, I selected another group of students, different from my daughter's grade, to avoid any possible conflict of interest. Also, since I work in another school from the same district, it was clarified in the consent form that participation was voluntary, that denial to participate would not affect their relationship with me, as a colleague or as a researcher, and that they might withdraw at any moment without further consequence.

Summary

In this chapter, the research design and rationale were described to justify why a case study was the appropriate design for this dissertation. The role of the researcher as well as the methodology followed was described in detail. Participants' recruitment and participation procedures were explained followed by the data analysis plan. Issues of trustworthiness to assure the credibility, transferability, dependability, and confirmability of results were addressed along with the ethical procedures to protect the integrity of participants. Chapter 4 includes the procedures followed for the analysis of data and the results of this qualitative study.

Chapter 4: Results

Introduction

Even when digital technology can contribute to the development of 21st-century competencies and social change in primary education, neomillenial students do not usually use information and communication technology (ICT) for those purposes at school (Kong et al., 2014; Montgomery, 2014). Students primarily use digital educational technology to access online class portals and to take online tests (Project Tomorrow, 2014). The purpose of this qualitative case study was to examine the experiences of two middle-school teachers and their sixth-grade students as they used critical literacy strategies and ICT to promote 21st-century competencies and critical democracy. My objective was to provide teachers and students an opportunity to reflect on their learning and teaching practices using critical literacy and ICT to promote 21st-century competencies and social change. The research questions that guided the study were:

Research Question 1: What were the experiences of two middle school teachers using ICT and critical literacy to promote 21st-century competencies and critical democracy in a Midwestern public school?

Research Question 2: What were the teachers' reflections about their critical literacy teaching practices using ICT to develop 21st-century competencies and critical democracy?

Research Question 3: What were the students' reflections about their learning experiences using ICT to develop knowledge, 21st-century competencies, and critical democracy?

I collected data through interviews, online discussion forums, and artifacts. The two teachers were interviewed face-to-face, and the students' experiences were collected through online forums. For triangulation of sources, I also included artifacts in the analysis. The artifacts included samples of the students' classwork, students' digital products, and the teachers' unit plans.

This chapter includes a description of the study's setting and demographics. Demographics were split into the school's, the grade's, and the participants' data. Second, the data collection procedures are explained in detail, including some minor variations that I incorporated due to external circumstances. Subsequently, the analytic induction approach I used to analyze the data is explained, followed by a description of the steps taken to ensure the trustworthiness of the study. Finally, I present the results and conclude the chapter with a summary.

Setting

Ella Baker School (pseudonym) is an urban, public school located in a large Midwestern city in the United States. It serves approximately 450 students from Preschool through eighth grade. This public school is accredited as an International Baccalaureate (IB) School, and it offers the Primary Years Program (PYP) from Kindergarten through fifth grade and the Middle Years Program (MYP) from sixth through eighth grade. Both the PYP and the MYP programs are offered in the same

building. The IB accreditation contributes to having an integrated system of services, professional development, and a horizontally- and vertically-aligned curriculum.

The middle school serves students from sixth through eighth grade, and it has two classes per grade. Each middle school teacher teaches all middle school students, which means that, for each subject, the students have the same teacher for three years. Middle school teachers meet regularly to coordinate their units of study and create transdisciplinary learning experiences. Professional learning communities (PLC) are promoted at school, and the schedule provides time for teachers to plan together, which has contributed to the horizontal and vertical alignment of the curriculum.

The curriculum consistently supports the development of the IB students' profile attributes. This profile aims to develop students who are inquirers, thinkers, knowledgeable, communicators, open-minded, caring, principled, risk-takers, balanced, and reflective, and all units are designed to promote one or more of those attributes. In fifth and eighth grades, students are expected to do a social change project. In fifth grade, they are expected to participate in an exhibition at school. Fifth-graders must research a social issue of their interest, communicate their findings with the school's community, and actively respond or participate in a social action. In eighth grade, the students are expected to get deeper in the social action process and contribute to a social endeavor or community project in their community.

Demographics

School Site

The school. Ella Baker School is located in the downtown area of a major Midwestern city. The neighborhood was primarily an African American neighborhood during the sixties and subsequent decades. However, due to gentrification practices in recent years, African American families have been displaced, and the neighborhood has become more diverse, as have the school's demographics.

Table 2

Site School Demographics

Characteristic	Students K-8 (N = 450)	%
Race		
African-American	169	37.6
Asian	7	1.6
White	188	41.8
Hispanic	64	14.2
Native Hawaiian/Pacific Islander	1	0.2
Multiracial	21	4.7
SPED[a]	121	26.9
ELL[b]	26	5.8
Free lunch eligible	214	47.6%

Note. Data retrieved from the official webpage of the School's State's Department of Education. Information was available for the 2017-2018 academic year. [a] Special Education. [b] English Language Learners.

Table 2 shows the demographics of the school site in which almost half the students are eligible for free lunch. These statistics provide a general picture of the school's ethnic and socioeconomic diversity and a point of reference regarding how the participant students represented their class appropriately.

The sixth-grade class. The whole sixth-grade consisted of 35 students. These students were grouped differently during the day according to the elective classes they chose. For example, at one point they were divided into Mandarin and Spanish classes, while during other periods they were split into Orchestra and Design. This arrangement meant that the grouping was different in each period. For Language Arts and Social Studies, they were split into two classes also. While half the grade was in Social Studies, the other half was in Language Arts and vice versa. However, both classes had the same Language Arts and Social Studies teachers and experienced the same learning activities. The general demographics for the whole sixth-grade is described in Table 3.

Table 3

Sixth-Grade Demographics

Characteristic	6th-Grade Students (N = 35)	%
Gender		
Girls	24	69
Boys	11	31
Race		
African-American	11	31
Asian	1	3
White	16	46
Hispanic	3	9
Native Hawaiian/Pacific Islander	0	0
Multiracial	4	11
SPED[a]	7	20
ELL[b]	0	0

Note. [a] Special Education. [b] English Language Learners.

Participants

The teachers. This case study was limited to the learning and teaching experiences of two middle school teachers and their sixth-grade students. Both teachers

chose a pseudonym of their preference. The Language Arts teacher chose Jane, and the Social Studies teacher chose Lincoln. Jane was an English teacher with 16 years of experience in middle and high school. During the interview, she expressed how committed she was to her district because she has spent most of her life in it, first as a K-12 student and then as a teacher and curriculum coordinator at various schools. Jane got a master's degree in creative writing and actively participates in professional development and professional conferences. She also has written articles for academic journals about her teaching practice, has served as editor and assistant editor of education magazines and journals, and has been an active member of professional and community organizations. Lincoln has been a Social Studies teacher for 4 years. He spent his first year at another district as a middle school teacher, and 3 years as a sixth, seventh, and eighth-grade social studies teacher at Ella Baker School. He got a master's degree in effective teaching and leading. Like Jane, he also has participated actively in professional development and has presented his work in professional conferences. Table 4 summarizes the teachers' demographics and professional background.

Table 4

Teachers Demographics

Pseudonym	Years teaching	Race	Subject	Masters' degree
Jane	16	White	Language Arts	Creative writing
Lincoln	4	White	Social Studies	Effective teaching and leading

Table 5

Students' Demographics and Participation

	Age	Race[a]	SPED	ELL	Participation	
					Online forums	Artifacts
Girls						
Ashley R.	12	African-American			X	X
Elizabeth Jackson	12	White			X	X
Gracelyn-May	12	Biracial			X	X
Jocelyn	12	Latina			X	X
Lia	12	White			X	X
Liv Moore	12	White			X	X
Saoirse	12	White			X	X
Aylin López	12	Latina				X
Boys						
Jerome Jackson	12	Biracial			X	X
Neymar	12	White			X	X
Cristiano Ronaldo	12	Chinese[b]			X	X

Note. [a] As self-described by participants in their assent form. [b] Described as Biracial by parents.

The students. From the 35 sixth-grade students at the site, 11 students assented to participate in the study: one African American, two Latinas, one Chinese American, two biracial, and five white. From the total of 11 participant students, 10 students participated in the online discussion forums and granted permission for their artifacts to be analyzed. Only one student did not participate in the online forums but assented for her artifacts to be included. The students who joined the study provided an adequate representation of the class' racial diversity. The distribution of girls and boys who participated in the online forums coincidentally matched the class distribution, 70% girls and 30% boys. However, all students interested in participating in the study were

included; no student was rejected to participate to keep this ratio. Like their teachers, the students chose their preferred pseudonym for the study. Table 5 describes the students' demographics and their participation in the study.

Data Collection

Data collection procedures started after both Walden University's IRB and the school's District Research Office granted authorization. Walden University's approval number for this study was 06-01-18-0313177 and expired on May 31, 2019. The school's District Research Office granted authorization by email after receiving a copy of Walden University's approval.

Teachers' Interviews

This case study was based in the experience of two middle school teachers as a unique case because of their teaching practice integrating critical literacy and ICT for the development of 21st-century competencies and critical democracy. Originally, the design included in-class observations but, since all necessary permissions to conduct the study were obtained after the school year was over, the in-class observations were not possible. However, the data were collected through semi-structured interviews with teachers, online discussion forums with students, and artifacts such as teachers' plans and students' classwork and products providing enough sources for triangulation.

Two interviews were originally planned for each teacher, one at the beginning of the study including questions about critical literacy and the use of ICT and another at the end of the study including questions about critical literacy, use of ICT, 21st-century competencies, and critical democracy. The way questions were originally organized

would help the teachers reflect before and after the implementation of the human rights unit. However, since the collection of data was finally done after the unit was implemented, the order of the questions included in the semi-structured interviews guide was altered to suit the study's new context. The order of the questions was the only element changed; none of the questions was deleted, and no new question were added. Instead of having questions about critical literacy and the use of ICT in both the first and the second interview, the questions for each interview were organized by topic in the new guide. All questions related to critical literacy were included in the first interview, and all questions about the use of ICT, development of 21st-century competencies and critical democracy were presented in the second interview. The same semi-structured interview guides were used with both teachers. The interview guides are shown in Appendices H and I. Additional follow-up questions were included as necessary.

Jane and Lincoln were interviewed individually after the school year was over. The location and time for each interview were set at the teachers' convenience. Both teachers chose to be interviewed at another school different from Ella Baker School but within the same district. Lincoln was interviewed both times face-to-face at the school he chose. His first interview occurred at the school's conference room and included all the questions from the Teachers' Semi-Structured Interview Guide 1 (Appendix D). His second was held at the school's library and included all questions from the Teachers' Semi-Structured Interview Guide 2 (Appendix E). Both interviews were recorded using a digital audio recorder. The first interview lasted one hour and five minutes, and the second one lasted one hour and eight minutes.

Jane was interviewed at the same school as Lincoln. Her first interview was held face-to-face at the school's library and was recorded using a digital audio recorder. Her second interview was over the phone, and it was recorded using an audio recording application for smartphones. Due to time availability and for her convenience, Jane's first interview included all questions from the first guide (Appendix D) and the first half of questions from the second guide (Appendix E). On a subsequent date, she did her second interview and completed the second half of questions of the second guide. The first interview lasted one hour and 54 minutes and the second one 39 minutes. All teachers' interviews were professionally transcribed ad verbatim. Both teachers were prolific in details, examples, and explanations about their teaching practices, experiences, and theoretical frameworks. In addition, the teachers' unit plans were collected for analysis.

Students' Online Forums

The students provided data for this study by participating in online discussion forums and by sharing with the researcher their classwork. Originally, the online discussion forums were planned to be held in separate sessions at the school's computer lab. Each session would have occurred on a different day and while the students were still at school. The purpose was to motivate students to read the responses of their peers and make comments. However, since the data were collected after the school year was over, the students were less available, and the four discussions had to be held in just one session. Having the four discussions on the same day resulted in a heavier task for students, for that reason, they were not encouraged to comment on their peers' answers.

The students limit their participation in answering the questions presented without making comments on their peers' responses.

Two sessions for the online discussion forums were set at school during the Summer break. The first session was held in the computer lab, and three students participated in answering the questions of the four forums (Appendix H). The second session was held in a second-grade classroom because the computer lab was not available that day. Two students participated using the researcher's laptops, and they answered all the questions of the four forums. However, among the students recruited on those two sessions, there were no African American or Hispanic students. To make possible a wider representation of the students' racial and ethnic diversity and to make the participation easier for students with transportation limitations, additional sessions were made available during the next academic year.

A third session was programmed during after-school hours, and three students participated, one self-described as white, another as biracial, and the last one as Latina. At this moment, another student expressed interest in participating, but he was not available that day. For that reason, a fourth session was planned to accommodate for any additional interested student. The fourth session then occurred at the school's library during school hours, and two students participated, one biracial and one African American.

All students chose the pseudonym of their preference. In addition to the online forums, the students' classwork and products were collected for analysis. Students' artifacts included various worksheets used in class as research tools for registering and

organizing information and graphic novels created by the students either on paper or using PowerPoint. The graphic novels were about the events presented in John Lewis' graphic novel *March, Book Three* (J. Lewis, Aydin, & Powell, 2016) or about other human rights issues of their choice.

Artifacts

The artifacts gathered for analysis consisted mainly of students' classwork and the teachers' unit plans. The students' classwork included worksheets for organizing research, graphic organizers, an infographic about human rights, and graphic novels made either on paper or using PowerPoint (PP). All worksheets and letter-size graphic organizers were scanned and uploaded to Nvivo in pdf format. Bigger graphic organizers were photographed and uploaded to Nvivo in jpeg format. However, not all participant students' work was available for analysis. The teachers provided all students' artifacts that were available, and students assented for their classwork to be analyzed. Table 6 shows the artifacts collected from each student.

The teachers' unit plans specified the interdisciplinary objectives, key concepts, inquiry questions, the approaches to learning, and the learner profile attributes to be promoted. The teachers collaboratively designed the unit including both Language and Social Studies concepts and objectives. The unit plans were available as pdf's, and they were uploaded to Nvivo in their original format. Both students' and teachers' artifacts were analyzed to discover evidence of the development of 21st-century competencies.

Table 6

Students' Artifacts

	Graphic Organizers[a]							Graphic Novels	
	A	B	C	D	E	F	G	Paper	PP[b]
Girls									
Ashley R.	X			X					X
Elizabeth Jackson	X		X			X			X
Gracelyn-May	X	X				X			
Jocelyn	X			X	X	X	X		X
Lia	X	X		X			X		X
Liv Moore	X						X		X
Saoirse	X				X	X	X	X	
Aylin López[c]						X		X	
Boys									
Jerome Jackson	X			X					
Neymar							X	X	
Cristiano Ronaldo				X					X

Note. [a] The graphic organizers' titles were: A. Taxonomy of Human Rights; B. Civil Rights Movement-Related Organizations; C. Summary of *March: Book One* Graphic Organizer (J. Lewis, Aydin, & Powell, 2013); D. Human Rights in *March: Book Three* Graphic Organizer (J. Lewis et al., 2016); E. Human Rights in *March: Book Three* Graphic Organizer; F. Graphic Organizer for Internet Research; G. Human Rights Issues Graphic Organizer. [b] PowerPoint. [c] This student did not participate in the online discussion forums.

Data Analysis

The analysis of data in this case study followed an analytic induction approach (Merriam, 2007). Merriam described this approach as a process of refining the hypothesis as data emerges. Even when there was no specific hypothesis in this study, strong theoretical assumptions and conceptual framework guided the analysis. For that

reason, the conceptual framework was contrasted with the emerging data and was updated according to the findings.

The teachers' interviews were the first data that were collected and analyzed using Nvivo 10. The first cycle of coding interviews was done right after the interviews were professionally transcribed following primarily a values coding method to get a sense of the participants' perspectives and then a descriptive approach to detail content (Saldaña, 2016). After the teachers' interviews, the students' online discussions were completed, and the new data were uploaded and analyzed using Nvivo 10. This first cycle of coding students' discussions also followed a values coding methodology first and then a descriptive approach. The second cycle of coding interviews and online discussions was conducted following an eclectic coding method to refine the first cycle selections (Saldaña, 2016). Each interview and each online discussion were analyzed several times to revise the codes already identified, consolidate similar codes, and include additional ones.

First Coding Cycle

Following an analytic induction approach, the first cycle of coding data was done taking the conceptual framework as a reference. The emerging data were compared to the conceptual framework. Any additional emerging concepts were kept as part of the codebook. Several copies of the codebook were saved to analyze its evolution later. The first cycle of coding data resulted in a series of expected codes such as collaboration, communication, creativity, critical thinking (4Cs), and information, media, and technology (IMT), all of which were part of the conceptual framework and the Learning

and Innovation Skills (4Cs) and Information, Media, and Technology Skills sections of the P21 Framework for 21st Century Learning (P21, 2019b). For example, when asked in the first interview about her pedagogical approach, Jane explained, "my pedagogical approach, it's to get them collaborating." She added that students "did awesomely and it was great to see them working together." In the third student forum, when asked which skills they considered important in their development as students and future professionals, Cristiano R. said "communication," and Saoirse declared, "I think that creativity is an important skill for a future generation because we need to have solutions for tomorrow." It was evident that critical thinking and problem-solving skills were developed by students as it was pointed out by Gracelyn-May, "when we were doing our research, and you didn't know what to do, or you were stuck, you had to be a problem solver." These references were evidence of how the Learning and Innovation Skills of the P21 Framework were emerging from the data found.

The development of information, media and technology skills was also palpable. When asked how technology had helped them learn, Neymar J. commented, "there is more information on the Internet than you can find in books," and Saoirse said "the tech helped us this unit with writing, because we didn't have to write on paper by hand, we just typed on Word. Also, we used technology for research." Multimodality and multiliteracies were also emerging themes. Ashley R. recalled, "we did a graphic organizer from the book *March Three*. We saw a black and white movie about Bloody Sunday and everything to summarize what happened." In conclusion, it was also evident

that the Information, Media and Technology Skills as described by the P21 Framework were also present in this case significantly.

However, a group of concepts evolved that were not part of the conceptual framework but that were part of the P21 Framework. From the teachers' perspectives, there were references to constructivism, inquiry-based learning, student-centered approaches, metacognition, authentic assessment, and the learning environment. Both teachers described themselves as having a constructivist approach in which the learning is student-centered, and the teaching is inquiry-based. Lincoln explained, "as a pedagogical stance, I come from somewhere along the lines of construction and constructivism. I want students to sort of construct their understanding of the world."

Similarly, Jane said, "I think that as a language and literacy teacher, I do take a pretty pure constructivist approach. We are born curious. We are born to experience the world as only we can experience it, and then construct meaning from there." Elements of collaboration, metacognition, inquiry-based learning, and a student-centered approach were evident in Jane's pedagogical approach as self-explained during her first interview:

> As a language and literature teacher, the biggest thing I try to do is I try to get out of the kids' way and provide parameters for them to be able to experience the world as a way to figure out what they're thinking. And then, once they have decided, "okay, this is my line of thinking", they have a new experience and then reflect again. Once they have determined a new line of thinking, it's time for me to say, "okay, well, have you considered this perspective?" And then it's time for me to give them the bread crumbs, so that then they can explore another perspective of what they thought they knew before. As a result, they can end up with ideas that are cohesive and hopefully nuanced for this age. So, I would say that's a big thing for me.
>
> The other thing for me is I want to provide a forum for them to cultivate their own agency, for them to understand what they do and don't know, because they don't always recognize their strengths and gaps. I have no desire to be the overlord of

> their knowledge. Instead, I want them to enter into a classroom or a conversation and say, “I don't know what I know about this. So, I need to figure out what I do know, and then I sort of need to, from there, move into what I think I don't know, and learn that, and then figure out what else I'm missing.”
>
> This is a very messy process. And, because of this sort of nontraditional approach, the classroom can feel a little different for people, and sometimes a little uncomfortable even for the kids, at first. But I would say that's pretty much my pedagogical approach, is to get them collaborating and, to just get out of the way as often as possible. I want them to figure it out. The best classroom for me is a class where the kids are learning and not where the teacher is necessarily teaching.

Congruent with this pedagogical approach, Lincoln described an experience of authentic assessment with his students. After members of the House of Representatives of their state visited the school, Lincoln invited the students to send them thank-you cards and use the opportunity to advocate for issues that were important to them.

> I had the eighth-graders write to those people, and they started off, “hey dear representative, you came and talked to me on April Fourth. That was very awesome. I really liked when you said this. What are you going to do about this issue? Here's the issue I care about. What can you say to that?” That was! I mean, that was . . . !
>
> They all had . . . , because they have done their community project, which is the thing that they do in eighth-grade, they all had an issue that they knew, that they'd been studying. And, we had just finished up our civil rights unit, and it was like ok, I can have you guys write something "authentic," with quotes around it, or I can just have you write an actual letter to these people, and I'll just assess on this because it's going to be important. And so, they wrote letters to . . . , they could pick one of the people that spoke to them at the April 4th MLK and RFK event and write them about an issue they care about.

Beyond being an authentic assessment, this learning experience was an example of critical literacy in the Social Studies classroom while promoting critical democracy. Students assumed an active democratic role and exercised authentic civic engagement.

Again, all important themes already contained in the conceptual framework emerged from the data during the first cycle of coding. However, soon in the process,

new codes began to emerge showing evidence of other sections of the P21 Framework. Codes related to the P21 Framework sections of Life and Career Skills, Key Subjects (3Rs), and 21st Century Themes emerged powerfully. Since the first student forum, teachers and students were commenting on how important global awareness and career skills were for them. "I want to provide a forum for them to cultivate their own agency, for them to understand what they do and don't know because they don't always recognize their strengths and gaps," said Jane. So, beyond just teaching a subject, Jane was worried about helping her students develop initiative and self-direction. On their part, students were showing their knowledge of 21st-century themes. "This topic is important because people need to realize that while we may have different cultures and different skin colors, we're all human;" Saoirse' words demonstrated her awareness of global issues. Since at the end of the first coding cycle, there were clear themes emerging that were not contained in the conceptual framework such as global awareness, metacognition, authentic assessment, inquiry-based learning, learning environment, and student-centered approaches, a second cycle was done to discover which other elements of the P21 Framework were present in the data and that were overlooked. The second coding cycle also served to refine the codes, consolidate similar codes, and revise the structure of the codes and categories.

Second Coding Cycle

The second coding cycle also followed an analytic induction approach, but instead of restricting the analysis to the conceptual framework, the analysis was made using the whole P21 Framework as a reference too. The second cycle exposed more P21 century

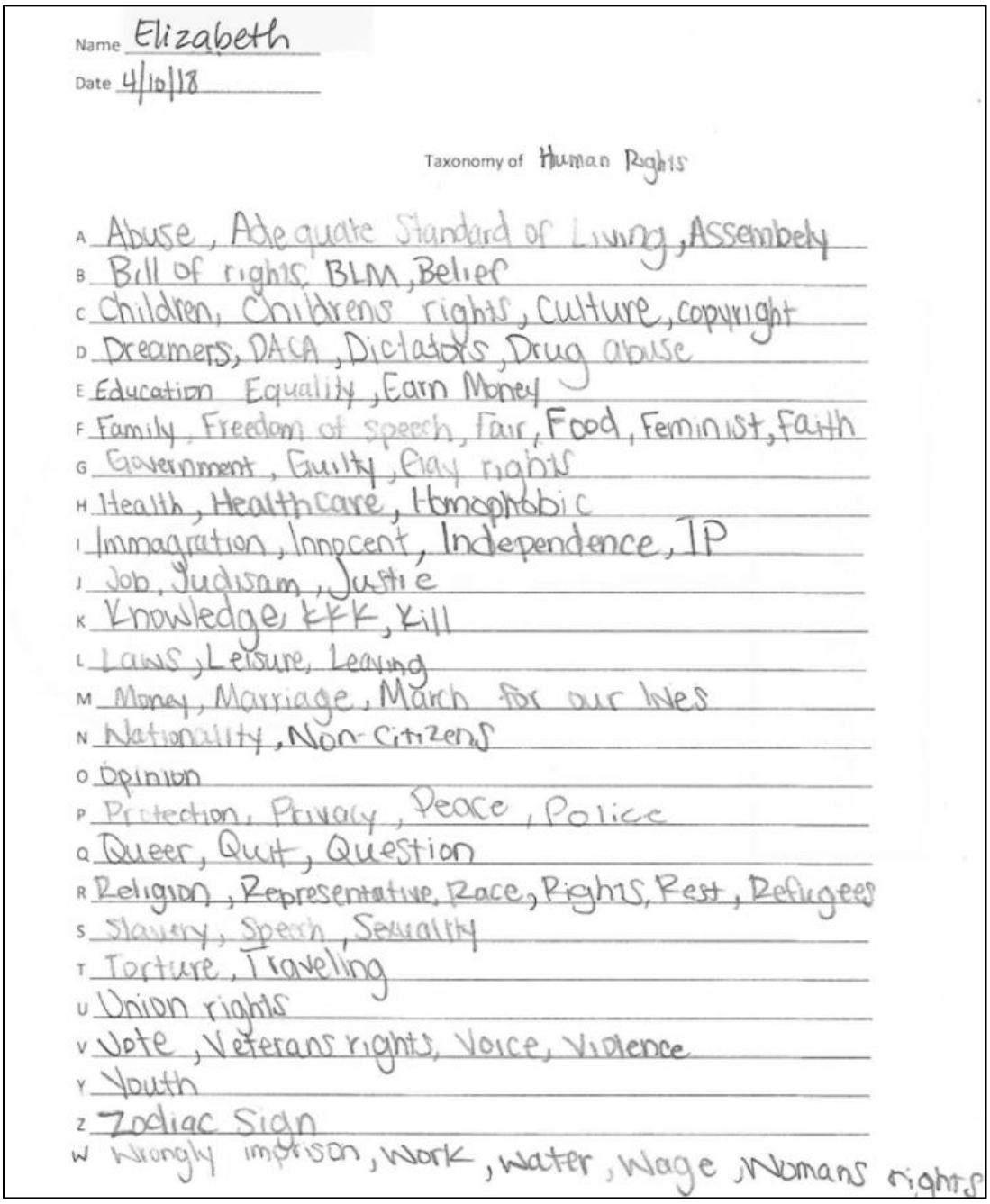
themes and life and career skills. "Lincoln and I had already written up almost all of our units together anyway, every unit that I did had to have a social justice focus." For Lincoln and Jane, teaching Social Studies and English purposefully embedded the inclusion of 21st-century themes. In their unit plans, the concept of "fairness and development" for "justice, peace, and conflict management" were part of the "global context" of the unit. The statements of inquiry for the unit were "we communicate our understandings of various human rights issues for the purpose of promoting justice and equity," and "creative expression is a powerful tool to contextualize the narratives of defenders of justice." On their part, students recognized 21st-century career skills as significant to them. Elizabeth J. expressed "I would like to learn more about career readiness because I don't really know what I want to do when I get older." Table 7 shows the students' perspectives regarding the importance of 21st-century skills.

The artifacts were the last set of data analyzed. All pdf documents and images were coded in Nvivo using primarily a descriptive approach. At this point, no new codes emerged. However, the same pattern of themes related to other sections of the P21 Framework other than those mentioned in the conceptual framework continued to be evident. Students demonstrated levels of global awareness and civic literacy through their artifacts as shown in Figures 5 and 6.

Table 7

Students' Perspectives Regarding 21st-Century Skills

	Which of those skills do you consider important in your development as a student and a future professional?	Which of those skills would you like to improve or learn more about in the future?
Girls		
Ashley R.	problem solving, leadership, creativity, career readiness, critical thinking	metacognition
Elizabeth Jackson	leadership	career readiness & global awareness
Gracelyn-May	problem solving	"talking" (oral communication)
Jocelyn	creativity & problem solving	problem solving
Lia	communication	writing
Liv Moore	leadership	metacognition & global awareness
Saoirse	creativity	career readiness
Boys		
Jerome Jackson	creativity, communication & collaboration, metacognition, critical thinking, problem solving, leadership	leadership
Neymar	global awareness	career readiness
Cristiano Ronaldo	leadership	metacognition



Name Elizabeth

Date 4/10/18

Taxonomy of Human Rights

A Abuse, Adequate Standard of Living, Assembely
B Bill of rights, BLM, Belief
C Children, Childrens rights, Culture, copyright
D Dreamers, DACA, Dictators, Drug abuse
E Education Equality, Earn Money
F Family, Freedom of speech, Fair, Food, Feminist, Faith
G Government, Guilty, Gay rights
H Health, Healthcare, Homophobic
I Immagration, Innocent, Independence, IP
J Job, Judisam, Justice
K Knowledge, KKK, Kill
L Laws, Leisure, Leaving
M Money, Marriage, March for our lives
N Nationality, Non-citizens
O Opinion
P Protection, Privacy, Peace, Police
Q Queer, Quit, Question
R Religion, Representative, Race, Rights, Rest, Refugees
S Slavery, Speech, Sexuality
T Torture, Traveling
U Union rights
V Vote, Veterans rights, Voice, Violence
Y Youth
Z Zodiac Sign
W Wrongly imprison, Work, Water, Wage, Womans rights

Figure 5. Taxonomy of human rights.

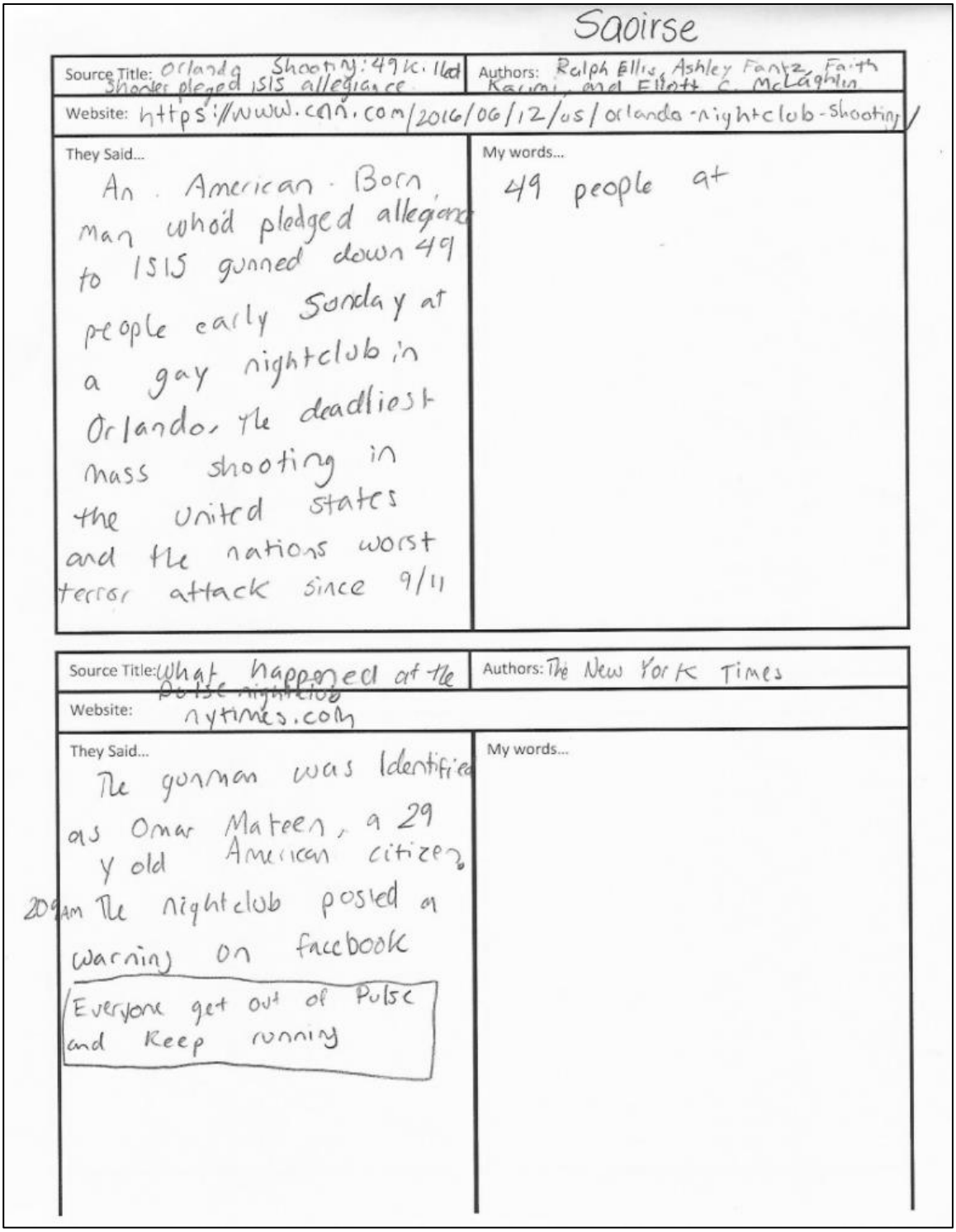


Figure 6. Graphic organizer for internet research.

During the second coding cycle, the data gathered from the interviews, the online forums, and the artifacts were compared with the conceptual framework and the P21 Framework. The result was that a series of concepts related to the key subjects and 21st-century themes such as civic literacy emerged. Other concepts related to life and career skills like flexibility and adaptability, initiative and self-direction, leadership and responsibility, and social and cross-cultural skills were represented by the experiences and perspectives of the participants. Finally, codes related to the P21 Support Systems were also easily identifiable like when the teachers made references to 21st-century standards and authentic assessment. Other support systems were also mentioned by the teachers, especially when they described their pedagogical perspectives based on a constructivist, inquiry-based, and student-centered approach and when they described their learning environment.

Since both students and teachers were constantly referring to skills in the P21 Framework that were absent in the conceptual framework, I reorganized the codebook and arranged the structure of the categories following the schema of the P21 Framework as evidence of the strength of that paradigm. Table 8 shows the result of both the first and second coding cycles and how the codes and categories were rearranged from one cycle to the other.

Table 8

Categories from Each Coding Cycle

First coding cycle	Second coding cycle
21st-century competencies	**21st-century competencies (P21 Framework)**
Learning and innovation skills (4Cs)	P21 Student Outcomes
Collaboration	*Learning and innovation skills (4Cs)*
Communication	- Collaboration
Creativity	- Communication
Critical thinking	- Creativity and innovation
Information, media, and technology skills	- Critical thinking and problem solving
Multimodality	*Information, media, and technology skills*
Multiliteracies	- Information literacy
Constructivism	- Information, communication and technology (ICT) literacy
Inquiry-based learning	- Media literacy
Student-centered approaches	Multiliteracies
Metacognition	Multimodality
Authentic assessment	*Key subjects and 21st-century themes*
Learning environment	- Civic literacy
Global awareness	- Global awareness
Critical literacy	*Life and career skills*
Critical democracy	- Flexibility and adaptability
	- Initiative and self-direction
	- Leadership and responsibility
	- Social and cross-cultural skills
	P21 Support Systems
	21st-century standards
	Assessment of 21st-century skills
	- Authentic assessment
	21st-century curriculum and instruction
	- Constructivism
	- Inquiry-based learning
	- Student-centered approach
	21st-century learning environments
	Critical literacy
	Critical democracy

Evidence of Trustworthiness

The methodological strategies stated in Chapter 3 to guarantee the credibility of this study were followed during the study's design and the collection and analysis of data. I implemented established methods and made the research design transparent. As the researcher, I revealed my professional background, knowledge, and familiarity with the context studied contributing to both the credibility and confirmability of the study. I also followed known IRB protocols for inviting participants, getting their informed consent, and protecting their integrity and identity. The semi-structured interviews were digitally audio-recorded and transcribed verbatim. I implemented member checking to guarantee that my interpretations were consistent with the participants' perspectives. In the case of the teachers, I met with them and shared all the citations I was planning to include as part of the results. They checked them, and what was included as results were their final versions of their ideas. In the case of the students, their responses were written, which contributed to having more clarity. However, if during the online forums I had any doubts about their responses, I immediately asked them what they meant. That way, I assured that my interpretations of their answers were correct. All these were procedures that contributed to the study's credibility.

For triangulation of methods, sources, and interpretation (Shenton, 2004; Toma, 2011), I gathered data from different sources. I interviewed the teachers, did online discussion forums with students, analyzed artifacts, and did member checking. Codes and themes can be traced back to different sources, strengthening the study's credibility and confirmability (Yin, 2014). The audit trail was made accessible and how codes,

themes, and categories emerged from data was explained and demonstrated with data samples contributing to the confirmability of results.

The transferability of the results were enhanced by thick descriptions of the school site, the grade, and the participants along with the procedures followed to collect data (Shenton, 2004). Descriptions of how teachers co-design instruction, participate in professional learning community activities and other professional development endeavors provided a clear profile of the teachers. Similarly, the description of the students' demographics, both of participant students as well as students in general, offered a general picture of the diversity of the students at the school site contributing to the credibility and transferability of the results.

The research design was explained in detail as well as the methods applied to the collection and interpretation of data. These explanations of procedures make possible the replication of the study (Shenton, 2004) or at least the transferability of experiences, even when replicability is not one of the purposes of this case study due to its uniqueness. Nevertheless, to assure dependability, detailed explanations of how participants were recruited, how data were collected and interpreted, and the triangulation of methods were included.

Results

The Partnership for 21st Century Learning (P21) designed a framework to organize the elements that comprise and support 21st-century learning (P21, 2019b). The P21 Framework has two sections, the 21st Century Student Outcomes (multicolored upper arch) and the 21st Century Support Systems (gray lower arches). When analyzing

data in this study, almost all the themes of both sections of the P21 Framework emerged. For that reason, I organized the findings using the structure of the P21 Framework for 21st Century Learning as described in their document P21 Framework Definitions (P21, 2019a). Additional categories found during the analysis of data have been added afterward.

P21 Framework: 21st-Century Student Outcomes

The 21st-century student outcomes are the knowledge, skills, and expertise students should master to succeed in work and life in the 21st century (P21, 2019a). The P21 Framework group them into four areas:

1. Key subjects and 21st-century themes,
2. Learning and innovation skills,
3. Information, media and technology skills, and
4. Life and career skills.

The original conceptual framework of this study included two of those areas, learning and innovation skills, and information, media, and technology skills. However, the other two areas also emerged during the analysis of data significantly.

Learning and innovation skills (4Cs). The learning and innovation skills are known as the 4Cs, collaboration, communication, critical thinking, and problem-solving, and creativity and innovation (yellow section of the multicolored arch). These skills were originally included in the conceptual framework because it was foreseeable that in a unit integrating ICT those skills would be promoted. Both students and teachers referred to them continuously during the interviews and the online forums.

Collaboration. Collaboration is defined as working effectively and respectfully with diverse teams, being flexible and willing to make the necessary compromises to accomplish common goals. Also, it involves assuming shared responsibility for collaborative work and valuing individual contributions (P21, 2019a). In this sense, Liv M. explained how the human rights unit served as an opportunity for her to develop her collaboration skills.

> I think the last unit of study helped me develop communication and collaboration. I think that because when I was younger, I would always want people to choose my idea instead of their own. But, after this unit, I started to listen to people's ideas more and choose theirs over mine. But, in other classes like math, I would work better on my own, and people always relied on me and asked me for answers.

The unit served both as an opportunity to improve skills and also allowed students to become aware of that need. As Gracelyn-May pointed out, "I think I could improve on my communication skills and teamwork skills. Sometimes, I like to work on my own, but I need to learn to work better in teams."

Collaboration seemed to be part of the teachers' pedagogical framework. Jane, the language arts teacher, affirmed that collaboration allows for better understanding, the accomplishment of more complex tasks, and the development of new skills.

> I think one way that allowing the students to use technology together to collaborate is that, I mean I've seen a couple of things happen. One thing is you sort of see leadership emerge when you have students who are collaborating. So, I guess I'm thinking of a specific example where the students wanted to work on a story together. They had a very ambitious story idea that neither one of them felt like they could complete alone. So, I said, "absolutely, you should be working through this together." So, they did that. So, they were again able to use technology to create a document where they were both collaborators on the document. They were able to work independently at home and then come together during class time at school and really look at where things were going well, where the story was dragging a little bit, where they needed to go back and tweak it. And I think, specifically, the skill set I saw emerge with these two students as individuals is that

> one of them is a very strong personality. She's very bright, but she doesn't always work well with others. And then the other person who was part of that duo, she isn't as traditionally successful as a student. And so, it was really interesting to watch the two of them work together and foster the leadership of student A, this kind of strong-willed really bright student who really took an interest in what her partner wanted to do as well with the story. But also, to see student B really start to gain confidence in her own abilities as a student and as a writer. So, and I don't think that that would have happened, I don't think it would have worked as well for them had they not had sort of that technological buffer in their collaboration.

In this case, collaboration was intrinsically linked to the use of ICT. The teacher highlighted the crucial role of using ICT to make the collaboration between those two students successful. This interpretation of the teacher coincides with the P21's argument of viewing all the components of the P21 Framework interconnected. However, Lincoln's collaboration experiences while using technology were different,

> My tendencies are to shy away from student collaboration, especially when it comes to technology. Because sort of like the cell phone conversation, that when they're all using an iPad it ends up being something that they use for non-academic things. They're taking pictures. They're googling memes. They're doing things like that. Whereas, when they're working with their friends, it's a lot easier for them to get sidetracked when they have the technology near them. And so, my tendency is when we're doing work with an iPad or a computer that it's individual work. Now that I think about it, the research side of it is almost always individual. I don't like when they're doing research together. The creation side of things, when they're making something or creating something, becomes a little bit easier to work in a partnership. But, my tendency is that it's individual work so, they don't do a whole lot . . . I mean, there are definitely times that I've done, I mean, any time they're making videos. But, a challenge with that is that, once they're done filming it, if they're putting together something, it ends up being one person working on it. I've had multiple other people not having anything to do because, if it's the video editing, it's really a one-person job. So, other people then just sit there and start distracting other people. That's not great.

Communication. Communication is defined as the act of effectively articulating thoughts and ideas using oral, written and nonverbal skills, listening effectively to decipher meaning, and using communication for a range or purposes while utilizing

multiple media technologies (P21, 2019a). Teachers included communication in the design of the unit as one of the main goals. One of the statements of inquiry of the unit read: "We communicate our understanding of various human rights issues for the purpose of promoting justice and equity." Lincoln concluded that they were successful as teachers by helping their students develop their communication skills and use them to promote equality:

> We did a pretty good job of having students do what we wanted to when we started out. Because we were examining different human rights issues and the students were focusing on how to communicate those issues, and how to communicate or promote equality or equity between different groups of people.

The students' perspectives support this interpretation regarding the students' achievements. Several students saw communication as an important 21st-century skill and others considered that they improved their communication skills during the unit. Jerome J. said, "I think that I improved my communication and collaboration skills" and similarly, Lia said, "I think I improved my communication skills. I improved by communicating with my classmates about what they think about the book." Jocelyn F. thought that she "improved [her] communication skills a lot;" she added, "I improved my communication by talking to a lot of people." In the same pattern, Elizabeth J. concluded that

> through the activities, I got better at really reading and making sure I understand what I was reading. I got better at taking notes and writing about was I was thinking, and what was important about what I was reading. I got better at taking all the important information and writing about that.

From the teacher's perspective, Jane explained the students' reading achievements when they were able to choose their independent reading titles. She said, "it was really a

great achievement to be able to watch them do that [choosing titles by themselves] and then see the benefits of that; kids who had never books, ever, were reading books during that independent book time." In conclusion, from both the teachers' and the students' perspectives, the students were able to improve their communication skills during the unit.

Creativity and innovation. Creative thinking includes using a wide range of idea creation techniques, creating new and worthwhile ideas, elaborating, refining, analyzing and evaluating their ideas, working creatively with others, being open and responsive to new and diverse perspectives, and demonstrating originality and inventiveness (P21, 2019a). Creative thinking skills were one of the approaches to learning specified in the unit's design. It was intended to generate novel ideas and consider new perspectives. In the interview, when talking about the objectives of the unit, Jane explained

> And then, obviously creativity. I think the unit is also a really good example of how again, there are multiple ways to know. And so, we wanted students to not just take a test over March or over human rights or whatever, but we wanted them to create something. And, again, to give them power, to sort of cultivate empathy, and really thinking through the nuances of these heavy issues at a pretty young age, which is kind of cool.

On their part, students recognized how the unit emphasized the importance of creativity. Gracelyn-May alleged, "I improved on my creativity. I could not have made my project if I had not use creativity." Elizabeth J. said, "The last unit of study helped me develop some more creativity skills because I had to put together a comic book and I had to think about how to organize my information and what I wanted to add to the slide." Similarly, Jerome J. added, "The last unit helped me to develop my creativity skills by letting me use as much creativity as I wanted for the drawing." The students'

artifacts analyzed for this study are evidence of the students' creativity in different ways. Figure 7 shows Saoirse's graphic novel as an example of a multimodal text. Saoirse's work was done using paper and pencil. She chose to write about LGBTQ rights and the experience at Pulse in Orlando, Florida, while showing empathy for LGBTQ issues.

Other students decided to create their graphic novels using PowerPoint showing an innovative way to use that application which is more commonly used for presentations. Cristiano R. was one of those students. He used PowerPoint mainly to place images as a background and add speech bubbles to show the dialogue of his story as it can be seen in Figures 8 through 12. Students showed innovation by using a known tool differently to fulfill a new purpose.

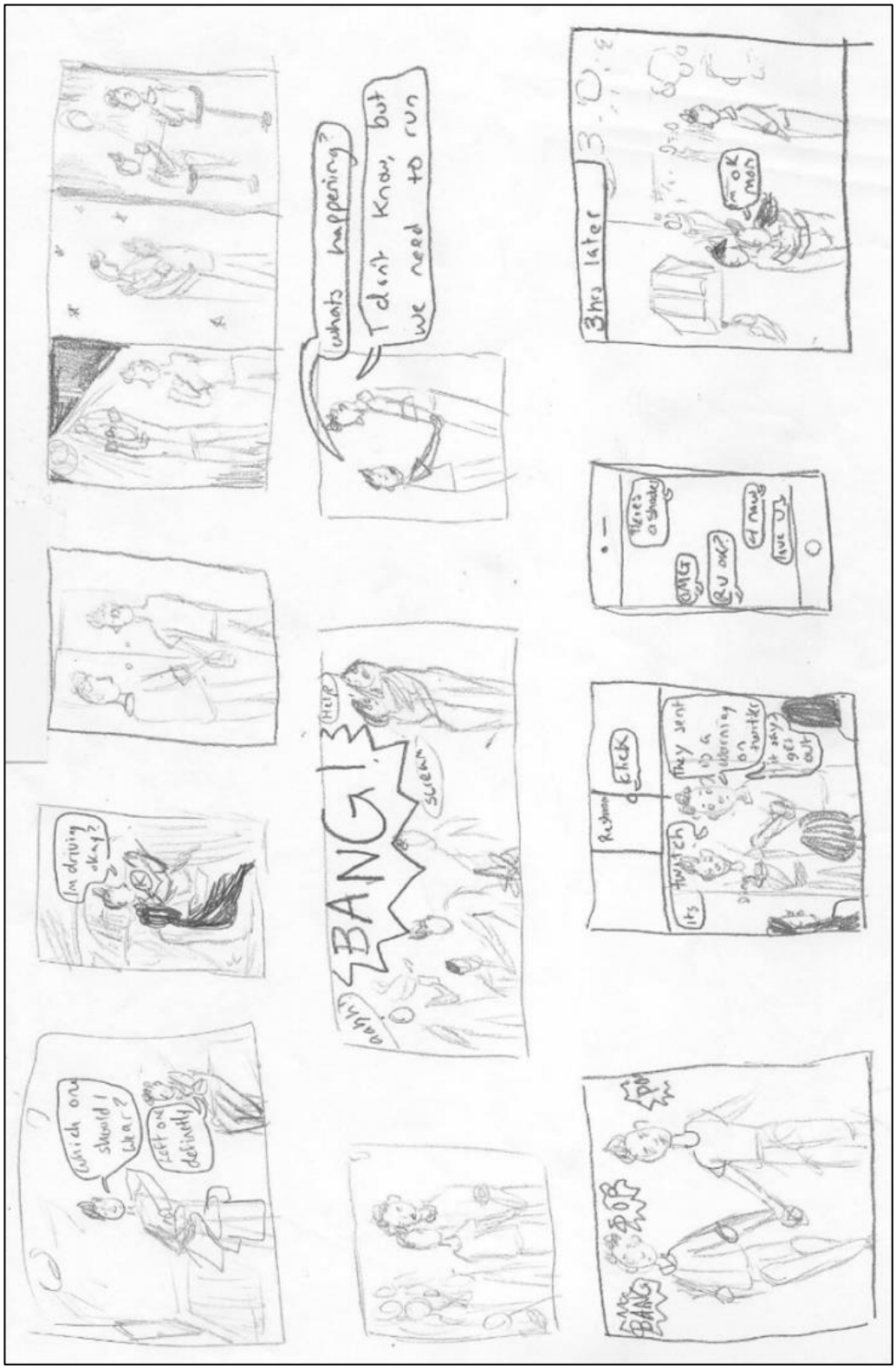


Figure 7. Saoirse's graphic novel.

Figure 8. Cristiano Ronaldo's graphic novel slide 2.

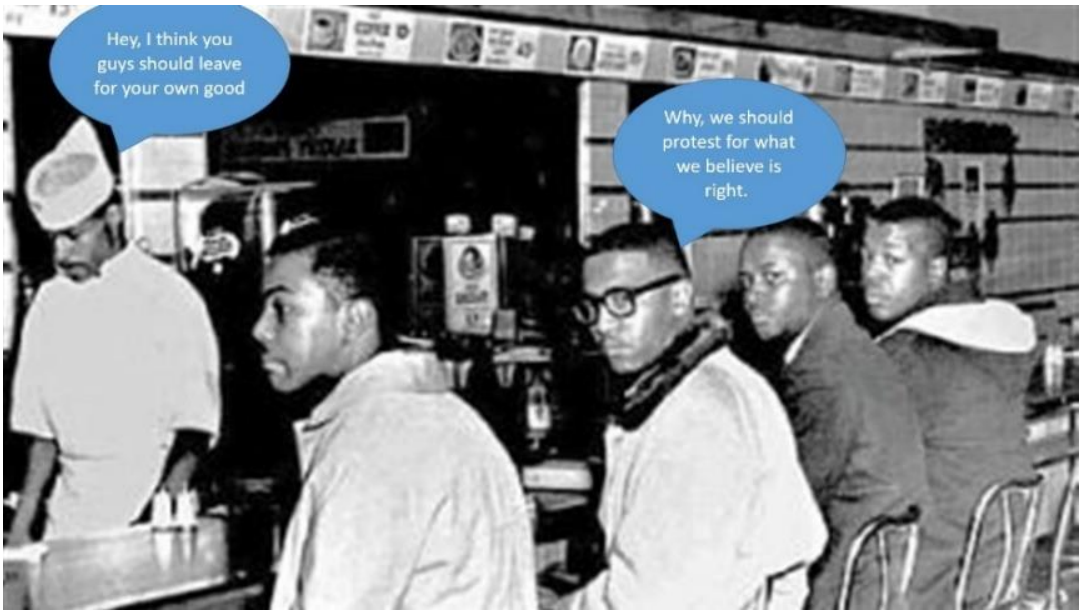


Figure 9. Cristiano Ronaldo's graphic novel slide 3.

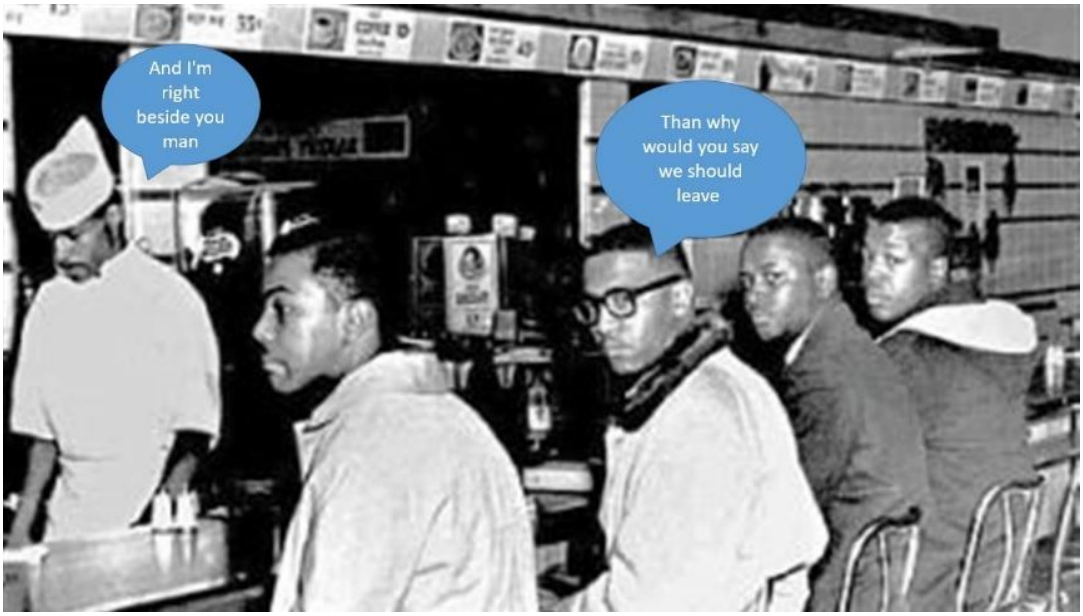


Figure 10. Cristiano Ronaldo's graphic novel slide 4.

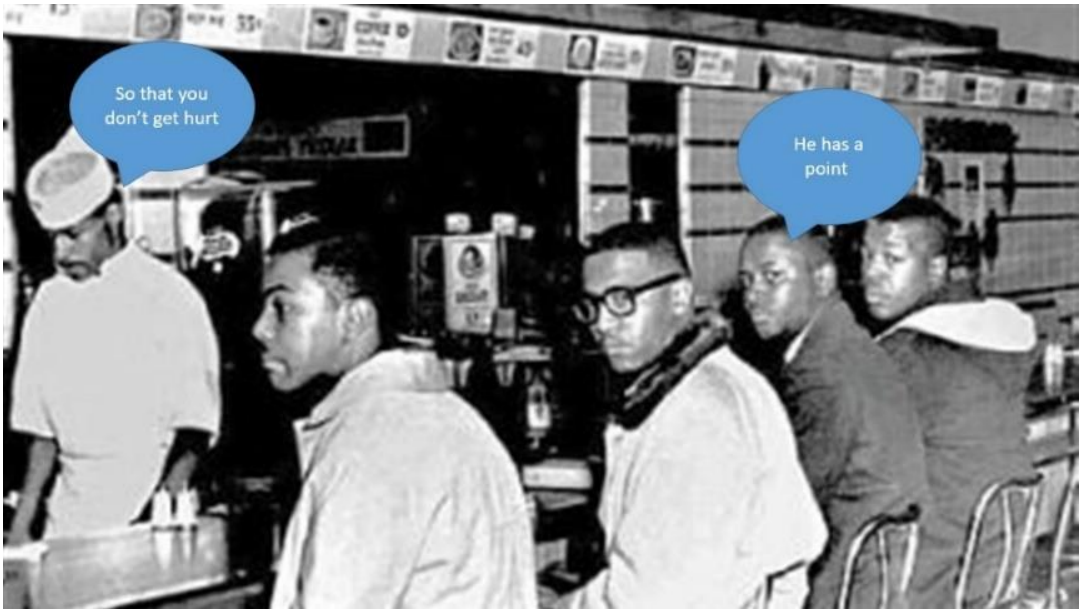


Figure 11. Cristiano Ronaldo's graphic novel slide 5.

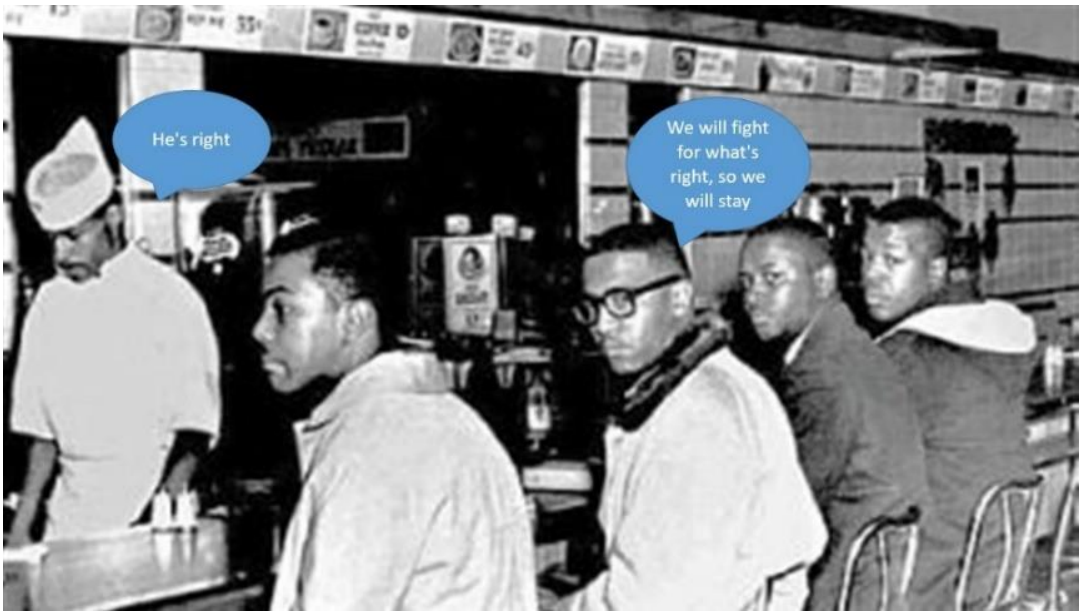


Figure 12. Cristiano Ronaldo's graphic novel slide 6.

Critical thinking and problem-solving. Critical thinking and problem-solving skills comprise reasoning effectively using various types of reasoning inductive, deductive, and others as appropriate. It includes systemic thinking including how whole and parts interact with each other and the ability to make judgments and decisions by analyzing and evaluating evidence, arguments, claims, and beliefs. It also involves analyzing and evaluating alternative points of view, interpret information and draw conclusions, reflect critically on learning experiences and processes, and solve different kinds of non-familiar problems in both conventional and innovative ways (P21, 2019a). Lincoln and Jane continuously challenged their students to think critically. As a first step, they invited their students to be open to other perspectives and avoid premature judgments.

In this regard, Lincoln shared an experience with his middle schoolers in which they were deliberating about the appropriateness of a group of NFL athletes kneeling

while the national anthem was played as a way of protesting and raising awareness against the shooting of black men by police officers.

> It was a really great opportunity for the students to taking understanding about an issue that mattered to some of them and not others, and learn from each other, that was a really great opportunity. And, looking at an event through different people's perspectives.

The implementation of this unit also provided examples of collaborative work in the process of solving problems as a community. Although the teachers had decided that students would create graphic novels either on paper or digitally, the teachers did not decide beforehand which specific application would the students use for their digital creations. Lincoln wanted the students to participate of the process of making that decision, as he explained,

> We had a vision for what we wanted to do for our graphic novels, and some of the students are not artistic enough to draw their own. So, off the bat, from the very beginning I said, "you don't have to draw these, because I'm a terrible artist as well. I would want to do this on the computer," and so, we had a vision of what this was going to look like where a couple of students were doing the Birmingham Church bombing. And, there were some websites that are sort of free cartoons or free graphic novels where you can make your own, and I've used a couple before, like the small animation ones, where it's 30 to 60 seconds of animation. But it wasn't what we wanted. All the free ones weren't giving us what we wanted or what we needed. And so, I had a couple of students that had gotten done with their research early or first, and I said, "okay, you guys try this website, you guys try this website, you guys try this one. And then, in half an hour, report back to me and tell me if we're going to be able to use this." They went and did that, and they came back and all of them were very frustrated because they couldn't get it to do what they wanted. And so, we scrapped all of that and we said, okay, let's try using PowerPoint.

At the end, the process ended being an instance of researching, planning, and making decisions together as a learning community in which both the teacher and the students collaborated to solve a problem.

Students also recognized their critical thinking skills applied to their own work, as for example, expressed by Elizabeth J. when she said,

> I think I got better at using metacognition because I had to go over all my work and make sure what I wrote was what I wanted to say. I also think I got better at critical thinking. I had to make sure what I wrote makes sense and that it goes with the rest of the paragraph or topic I was writing about.

This experience aligned with Jane's understandings of how students become more critical of their own writing when using ICT. When asked how she has seen her students change in their use of technology during the time that she has been a teacher, Jane explained,

> I've seen a lot of changes with regard to how students revise once they get on the computers. That they are changing, that they are not just recopying what they wrote by hand, but they are constantly moving that cursor back and forth and making what they have already done better. And then, in addition to that, when we come back to what they've typed the next day, they will go back over what they read, and they'll say, "I hate what I did yesterday, can I change it?" And I'll, "absolutely, yes, please change it. It's here, it's in this fluid document, let's change it." So, I think technology has really improved their ability to take a critical lens of their own work in some ways. Which is weird because you think there's this, I think, pervasive attitude that technology makes kids lazier. But, I think I've seen the opposite effect, as far as what they bring to the table and the work that they are willing to put into it, if they have this sort of fluid document on a screen.

Students also recognized how considering different perspectives affected their learning. About this matter, Saoirse commented, "I improved as a writer in writing for different perspectives, for example, writing as the one being treated unfairly, the man treating them unfairly, or the one watching the person being treated unfairly." Her statement demonstrates her understanding of how there could be different points of view about an issue and how she can represent that diversity of opinion in her writing.

Finally, Gracelyn-May described problem-solving skills as essential for effective collaboration. When answering about which skills she considered important for her as a student and future professional, she said, "problem-solving because you need to be able to solve our problems and be able to work together."

Information, media, and technology skills. The P21 describes the 21st century as a world driven by technology and media in which people have access to an enormous amount of information, changes occur rapidly, and people can collaborate and contribute individually "on an unprecedented scale" (P21, 2019a p. 5). For that reason, they consider essential for students to demonstrate information literacy, media literacy, and information, communications, and technology literacy.

Information literacy. The P21 describes information literacy as the ability to access, evaluate, use and manage information (P21, 2019a). One of the objectives of the unit, as described by Lincoln, was for students to evaluate different sources when researching on the Internet. He began by giving the students examples of credible sources and teaching them to evaluate Internet sites.

> One of the things I think that helped with the research side of this unit was that I gave all the students a starting point. I gave them one of two websites to search from, and we talked about, beforehand, why those two websites were credible websites. And then we used those, sort of our examples for what a credible website would look like. And then the students had to go find two of their own websites that were credible. And so, we started with hrw.org, humanrightswatch.org which breaks down human rights by issue. And so, students could pick an issue that they were interested. And we talked about how ".orgs," it really depends on the organization on whether it's credible or not.

Students evaluated by themselves some sites in the process of researching a human rights topic of their interest. They were accessing real-life sites with authentic

information, which turned their critical thinking process into an authentic one. As Lincoln explained,

> One student was at the New York Times website, and they dismissed it as not credible because it was a ".com." And, there was an advertisement that they thought looked sketchy, and then we had to talk about why they've gone so far that even just the slightest things make them think it's not credible. But, we had to talk a little bit about what are some of the famous newspapers and news agencies in America or around the world, and that the New York Times is typically a credible source. And so, that was an interesting conversation.

Finally, Lincoln concluded saying,

> I was really happy to see them looking at a website and thinking no, this isn't good enough, or I'm going to write down this information, but I need to find it somewhere else because I don't know if I believe it yet.

Those expressions demonstrate a level of understanding of how information can be manipulated and that there is more to do than just read a source. That critical thinking in managing information reveals the process of these students in developing information literacy.

Information, communication, and technology (ICT) literacy. Information, communication, and technology (ICT) literacy means using technology as a tool to research, organize, evaluate and communicate information. ICT literacy includes using digital technology, communication, networking tools, and social networks appropriately, while applying a fundamental understanding of ethical/legal issues regarding the use of technology (P21, 2019a).

Students were able to identify other 21st century skills that they improved by using ICT. Liv M. commented,

> The skills I think I improved by using information and communication technology are metacognition because I had to go back and reread my work and make sure I

> understood what I read. I also think I improved at being creative because I had to come up with an idea to write and make a comic.

Students expressed their preference of using ICT for researching over looking for the information in books because of its accessibility. However, they also identified some disadvantages of using ICT. Saoirse said,

> I like using technology for research instead of trying to find what you're looking for in a book and searching through it. What I don't like is that using tech is sometimes uncomfortable. It hurts to stare at a screen for hours.

Likewise, Neymar expressed, "I liked using the computers because I had more control. [However,] it is so slow sometimes." Liv M. also could identify advantages and disadvantages in using ICT, "I don't like how sometimes things aren't available, but I do like how things are more organized. Plus, you can research things faster by not having to look through a ton of books." Regarding things not being available, I asked her a follow-up question and discovered that she meant that some sites were restricted by the district and the teachers needed to give them codes to access them, and she considered it a disadvantage.

Jerome J. identified another challenge when using ICT. When asked what he would do differently if he were the teacher, he answered: "I would have tried to keep more people on task." I asked him as a follow-up question, "So, you mean that by using technology some students were distracted or off task?" He responded, "Yes. Some people that were distracted or off task because they were playing ended up not finishing." In summary, students identified both advantages and disadvantages of using ICT and challenges for teachers and students to overcome.

Media literacy. Media literacy is defined as the ability to analyze media and create media products (P21, 2019a). A multiliteracies pedagogy includes a meaningful practice and a critical perspective with a transformational purpose (J. M. Hughes & Morrison, 2014). When reflecting about the multimodalities that students use in her classroom and the multiliteracies that she promotes, Jane said,

> Well, I was just thinking about the various literacies that we use . . . So, one of the things that has been something that I feel very deeply about is how we, as the adults in the room, advocate for truly literate lives in our students and not just test passers or people that how I advocate for my students to have a truly literate life.

When reflecting on the students' achievements while using digital technology, Lincoln commented,

> One of the things that works well in having taught students for three straight years is I've been able to watch them really improve their technology skills, without it being something that's explicitly taught. Maybe that's sort of an area where myself or the school can get better at teaching these skills explicitly, but students working with a Microsoft PowerPoint, and as sixth graders they have very little experience working with that. And like I said, it could've been an area where I spend an hour or a class period, or why not teaching them how to use it, but by the time they're done with sixth grade even, or especially when they're done with eighth grade, the students have figured out how to work the ins and outs of Microsoft PowerPoint, and it's just doing a presentation, creating a presentation once or twice, or three times a year. Spending time in that program they get better at it, which isn't surprising. But it's sort of a success to see how skilled they are as eighth graders versus when they're sixth graders. I noticed that in this unit with the sixth graders some of them are saying I've never used PowerPoint before. And, then I'm like no, Jesus, I didn't prepare myself to be teaching you guys how to use PowerPoint. But, through trial and error or talking with their friends, they're able to get to a level where they've made a PowerPoint.

In addition to the teachers' perspectives, students also could testify about how multiple literacies were developed in the classroom. In this sense, Saoirse commented,

> We worked on March books, and creating our own stories, we had discussions about how we felt, we learned all the basic human rights, we read *March* and wrote down all the violations of human rights we saw, we watched a documentary on the

civil rights movement (I bloody Sunday), and made our own graphic novel about a human rights issue.

Researching on the Internet, watching videos, creating stories, having discussions, creating graphic novels, all these activities were different ways of gathering and sharing information using diverse media. Students learned by experience that information could be found and could be communicated in multiple ways and all of them were valid.

Students' artifacts also made evident that multiliteracies and multimodalities were promoted by the teachers. Students made graphic novels on paper while others used digital media to create their products. The basic elements were the same, and the message was as meaningful in both ways. Figure 13 shows Neymar's graphic novel made on paper. When asked which skills he improved by using ICT, Neymar answered that probably his communication skills, and right away he said that he was not a good communicator. Nevertheless, he made an organized, clear, and coherent story based on a historical character. Both the text and the illustrations conveyed a powerful message with a transformational purpose. These characteristics are also evident in Figures 14 through 16, which are examples of graphic novels made by students using PowerPoint. Figure 14 shows Liv M.'s graphic novel about the sit-ins in Atlanta, Georgia. As Cristiano, she used the technique of putting an image in the background and narrating her story using speech bubbles.

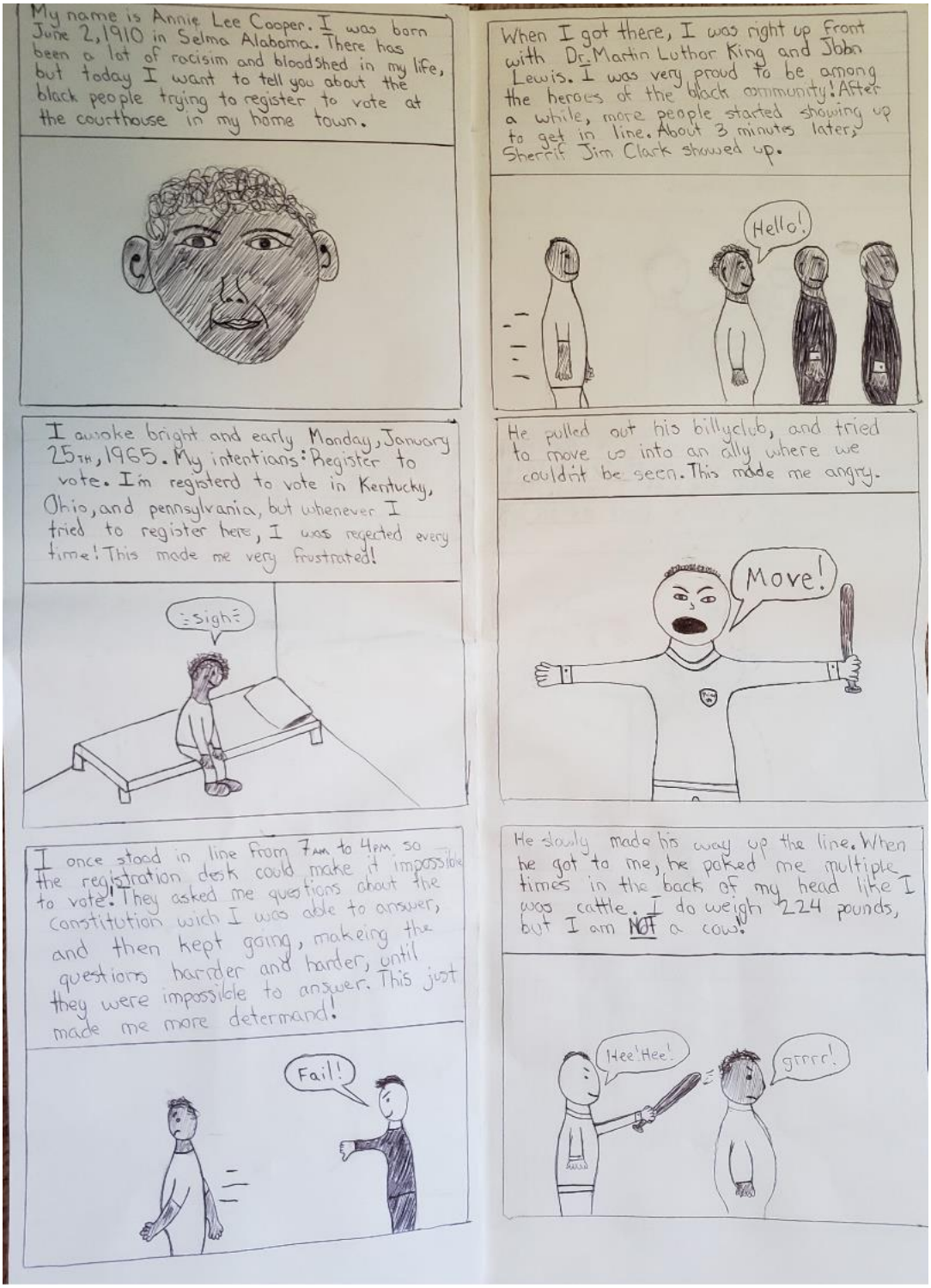


Figure 13. Neymar's graphic novel page 1.

Figure 14. Liv Moore's graphic novel slide 2.

On her part, Lia used PowerPoint differently. She created a historical fiction based on a historical character, the mother of one of the girls assassinated in the Birmingham Church bombing. She narrated a version of the events from that character's perspective as it was done in Lewis' *March* books. She not only understood the graphic novel in class, she was also able to reproduce the genre. She used PowerPoint's features to illustrate her novel as shown in Figures 15 and 16 demonstrating creativity and innovativeness.

Figure 15. Lia's Graphic novel slide 2.

Figure 16. Lia's graphic novel slide 7.

Key subjects and 21st-century themes. Key subjects include language arts, world languages, arts, mathematics, economics, science, geography, history, and government and civics (P21, 2019a). In this unit, the teachers taught language arts, history, and civics concepts and content primarily. Students worked with elements of the graphic novel as a genre, learned to take notes, and used reading, writing, and speaking techniques to communicate with different audiences. They also learned about the civil rights movement in the United States and related them to other historical events around the world, past and present, like the Apartheid in South Africa (See Figures 17 and 18) or the Black Lives Matter movement.

Figure 17. Ashley R.'s graphic novel slide 3.

Figure 18. Ashley R.'s graphic novel slide 4.

Civic literacy. Civic literacy means participating effectively in civic life, knowing how to stay informed, understanding governmental processes, and exercising the rights and obligations of citizenship (P21, 2019a). Even when these were not civics courses, these two teachers integrated civic literacy skills into the curriculum with a constructivist perspective. As Lincoln explained,

The constructivism comes about where they're constructing their own understanding about what human rights mean and about what it means to be a citizen in the world. Units like the human rights unit let students see themselves as citizens of the world, and that's important.

Students' expressions also provided evidence of civic literacy and civic engagement. For example, Gracelyn-May said, "I learned a lot more about the civil rights movement, now I am very educated and want to help with racial discrimination."

On her part, Ashley R. added that by "reading the *March* books, it made feel like if you want to protest, you don't have to use violence."

Students gained a clear understanding that the civil rights movement's issues were not something from the past. Sadly, much of it is still occurring today. On this, Gracelyn-May commented, "This unit has helped me realize this is still going on and I want to make it stop by being an advocate." The students' response was one of civic awareness and civic engagement. On the teachers' side, a profound civic commitment was also confirmed by Jane's claim,

> There's a part of me that really likes to help people register to vote and we will register voters at school at the ice cream social. Because we've done that, I mean as soon as I started at this school, I was like, "we need to get people registered to vote." Like that's something an eighth grader can do to facilitate that website for people.

That personal commitment extended to reach the students. For this teacher it is not only important to participate and be active in civic life, it is essential to include the students.

Global awareness. Global awareness involves understanding and addressing global issues, learning from and work with individuals from different cultures, religions, and lifestyles, and understanding other nations and cultures (P21, 2019a). Since the design of the human rights unit, the teachers included the concepts of fairness and development as part of the global context of the unit. Justice, peace, and conflict management were at the heart of the conceptual structure of the unit. Even when the historical moment was mainly the civil rights movement of the fifties and sixties in the

USA, more contemporary struggles were part of the discussion too. Regarding that standpoint, Jane explained,

> If we want to research March, you cannot research the civil rights movement of the 1950s and 60s and not include a piece on Black Lives Matter, or not include a piece on Apartheid. We must include these companion struggles that are extremely relevant to what we're studying in class. So, information technology really gives the kids an opportunity to explore how events don't happen in a vacuum, and things that seem old, are not old particularly social justice issues. Especially, we think because we exist in these ways in the school with great diversity that the struggle isn't there anymore. So, I think that's how information and communication technology really, really helps the students again, claim their power and really think through things.

These connections between the past and the present were also sustained by the students. Lia commented, "I learned more about the past and how things are today," and Neymar said, "This topic was interesting, and it really impacted me. I agree all the racism that is happening now, in this century, is scarily similar to the civil rights movement." Other students had similar thoughts. Jerome J. explained, "One other thing that I learned in this unit is that slavery isn't something that happened way in the past and that something just as horrible as slavery can, unfortunately, happen in America again."

When asked which of the 21st-century skills he considered important in his development as a student and future professional, Neymar answered, "definitely global awareness. Because people are too ignorant of their surroundings." He explained that the human rights unit helped him developed that vision "because the teachers taught us about the world. (global)." Neymar could directly relate his understanding of the importance of having global awareness to the learning experiences he had in the classroom.

Other students had similar points of view. Saoirse said that the human rights unit "helped me with global awareness because we worked on what's not fair in the world," and, Elizabeth J. declared, "I thought the topic of this unit was very relevant and important to talk about. We still see racism happening in our communities today and talking about the Civil Rights Movement and talking about Human Rights, I think will really help all of the issues we have get better. I think it is an important thing to be talking about." In summary, students repeatedly mentioned how relevant global awareness was for them.

Life and career skills. Life and career skills relate to the ability to navigate complex life and work environments by developing adequate life and career skills (P21, 2019a). Beyond the thinking skills and the subject-related content knowledge required to be successful, students and workers are expected to have a set of skills that prepare them for life and career. Some of those skills are being flexible and adaptive, having initiative and self-direction, managing social and cross-cultural skills, being productive and accountable, and exercising leadership and responsibility (P21, 2019a). Even when it was not expected, these skills emerged since the very first cycle of coding.

Flexibility and adaptability. Flexibility and adaptability are the abilities to adapt to change; to adapt to varied roles, jobs responsibilities, schedules, contexts, ambiguous climates and changing priorities. It also involves being flexible which includes incorporating feedback, and understanding, negotiating and balancing diverse views and beliefs to be able to work in multi-cultural environments (P21, 2019a). Having limited resources, the teachers at Ella Baker School had to plan carefully how they were going to

share the iPads and computers available. Jane explained, “we have to plan very closely with each other when it gets to the time where lots of people are using the iPads.” She added,

> I think the team is extremely flexible with regard to prioritizing, sort of moving the unit forward. So, if we say to, for instance Miss [INAUDIBLE], “we have a project that we're working on and the research really needs to be complete by Friday. Is it okay if you don't use the iPad for a couple of days?” She will, and then vice versa too. So, if she needs them, we will take a break. And the good thing about an inquiry-based approach is that there's always time in that inquiry cycle for us to say, “okay, so, we did this research piece yesterday, let's take a break today, kind of think through, what some of our challenges were?” We can think through where we might need to go next, what new lines of inquiry have opened as a result of what we did. So, one day without the iPad cart isn't a huge thing.

Both students and teachers showed flexibility in different ways. As mentioned before, Jane and Lincoln did not plan about a specific application to create the digital graphic novels, but students showed flexibility. They participated in researching, testing, and selecting which application would be useful to help them fulfill their goals.

Initiative and self-direction. Initiative and self-direction is related to managing goals and time, working independently, and being a self-directed learner (P21, 2019a). Concerning these skills, several students expressed either how they improved those skills or how they need to improve them in the future. Neymar commented, “I improved my study habits and retaining information.” Similarly, Saoirse said, “as a writer, I improved on working for a deadline; we didn’t have a lot of time to work, but we got it done.” Ashley R. recognized the importance of having self-direction when she noted that “I would improve my graphic organizer because I didn’t finish, and it was sloppy. I would improve it by putting more work and not wasting my time.” In general, at a very young

age, these middle schoolers are showing the relevance of life and career skills in their development as students.

Leadership and responsibility. Leadership and responsibility are related to the ability to "use interpersonal and problem-solving skills to influence and guide others toward a goal" while "acting responsibly with the interests of the larger community in mind" (P21, 2019a, p. 7). In this regard, several statements in the online forums revealed how the students perceived these skills as relevant in different scenarios. Jerome J. recognized, "I would like to improve my leadership skills" as a felt need. Elizabeth J. commented, "Leadership is important because when you get older, most people end up in an office job. You might have to be able to lead something the keep everything organized and calm." In Elizabeth J.'s case, she related the skills to a future job while keeping in mind the community role of being a leader. In a similar direction, Liv M. said, "some people don't know how to make hard decisions that are better for the team and not themselves." Liv M. took an ethic stance of what is good for the community as a priority over personal conveniences. Finally, in the case of Ashley R., she visualized leadership in a more social context but with enormous personal implications of what it means to be a leader, "I think how John Lewis took leadership and creativity into protesting showed me that you can protest and stand for what you believe in."

Social and cross-cultural skills. Social and cross-cultural skills means having the capacity to interact effectively with others and work effectively in diverse teams (P21, 2019a). Indirectly, students referred to these skills when stating how they felt regarding racism or how should people treat each other. Neymar, for example, remarked, "I

strongly feel that racism is bad!" His statement denoted comprehension of cross-cultural differences. Another student that made an expression of this kind was Liv M. She said, "What I thought about the topic of this unit is that it was interesting because you learned about how people would treat each other and how they still treat each other, and how we could help stop or change this."

P21 Framework: 21st-Century Support Systems

The 21st-century support systems are critical to ensure the students' mastery of 21st century skills. The P21 argues that 21st-century standards, the assessment of 21st-century skills, 21st-century curriculum and instruction, 21st-century professional development, and 21st-century learning environments have specific characteristics that are coherent with the development of 21st-century skills (P21, 2019a).

21st-century standards. The standards are seen by the P21 as the "understanding across and among key subjects as well as 21st-century interdisciplinary themes," emphasizing in "deep understanding rather than shallow knowledge," "engaging students with the real-world data, tools and experts they will encounter in college, on the job, and in life;" focusing in solving meaningful problems, and "allowing for multiple measures of mastery" (P21, 2019a, p. 8). Using real-life tools is a characteristic that Jane mentioned about her teaching. She explicated, "You'll be in a Google environment in your real life. In my real life, I'm in a Google environment as are most of the adults I know. If I'm going to cultivate a literate life, I should be giving them the tools now." She made this comment referring to the difficulties that she encountered in the classroom

because the students did not have Google accounts and sometimes their Microsoft 365 accounts were not as reliable when sharing devices and working online.

The human rights unit object of this study had a genuine interdisciplinary focus as the P21 Framework describes. Both Jane and Lincoln planned interdisciplinary objectives with a global perspective. Relevant content and deep understanding of issues rather than shallow knowledge were main objectives for the inquiry-based process. Some examples of these understandings were shared by both teachers. For example, Lincoln expressed,

> I'm not going to make them do things that aren't important . . . , and sometimes it's really easy, where a unit like human rights, it's really easy for them to see that it's important. And so, units like that one, aligned to my pedagogical stance, where they're learning about things that are important. So, the learning is important, and I don't have to force them to do things.
>
> Sometimes I describe myself as the worst history teacher ever because I don't care that much about history. I don't care about dates. It's something that I know, dates and people's names and quotes from people but I don't think that's the important part about a history class or a social studies class or an individual and societies class. I don't think those small details are the important part and in a lot of traditional settings those are things that end up being tested. I would rather, students in my class see the important part as learning about the world and seeing themselves as members of the world. And how can they then use that to do whatever they want to do in the world. And so, the history side of it doesn't matter but the deep understanding of the world matters.

Jane also explained how Lincoln and she went deep with the students in trying to understand both the complexities of the genre they were reading as well as the intricate political processes of the period.

> As they were reading March Three, Lincoln sort of took the lead on the contextualization of the events. And then in my room as they read, we looked at how nonlinear it is. And how when you're looking at nonlinear storytelling, how complex it is. Like how well it illustrates just sort of the rawness and the complexity of the time. And how that's a really great way for the graphic text to be

> a mirror to sort of this chaotic time in history. So, yeah, we did that, and we also, looked at, we did acts of discrimination. So, we had a lot of discussion on things that happened and how these things propelled the movement forward, so, these senseless acts of violence. We spend a lot of time talking about, which then we got into this research rabbit hole. This was true inquiry. So, we got into the, was it, the 1964 primary, where they went and registered black voters who weren't actually registered to vote and then started their own party. And so, we talked about sort of how radical that was. And so, that was like two class periods . . . because I felt like they didn't understand that event in the book. So, then we were back and sort of contextualized that. We did read you know like the quick-and-dirty Wikipedia page of that part of it, and then we had a lot of discussion about voting and what voting does to oppressed people or keep people in the margins.

Jane's descriptions revealed the deepness of the inquiry process, how these teachers were paying more attention to the levels of understanding of the students than how much content was covered. For students, it became a relevant topic, as Lia said, "I think that unit was interesting to learn about because I don't hear about that kind of stuff very much."

Assessment of 21st-century skills. The P21 describes the assessment of 21st-century skills as a "balance of assessments, including high-quality standardized testing along with effective formative and summative classroom assessments," balance of technology-enhanced, formative and summative assessments, emphasis on "useful feedback embedded into everyday learning," and "portfolios of student work that demonstrate mastery of 21st-century skills" (P21, 2019a, p. 8).

This unit presented several examples of formative and summative assessment consistent with the P21's vision. Lincoln expressed that, as teachers, they wanted to motivate the students to create something meaningful and relevant as their summative assessment. For that reason, the teachers opted for a graphic novel, which was the genre of the book the students read. As a formative assessment, the students summarized

March: Book One (J. Lewis et al., 2013) in a graphic novel format. That activity gave them some experience for them to create later their final graphic novel as a summative assessment.

The creation of a graphic novel is a complex process and it is an example of a work in which students demonstrate mastery of 21st-century skills. To create the final graphic novel, students demonstrated their research and communication skills, as well as their creativity and critical thinking. It was a student-centered project. Students could choose the topic and the preferred medium to present their final work. Instead of having all the elements of the assessment pre-designed by the teacher, students took initiative and control of their learning process and were able to innovate and show their creativity.

The P21 "supports a balance of assessments, including high-quality standardized testing along with formative and summative classroom assessments" (P21, 2019a, p. 8). However, in this case study, the teachers explained how standardized testing, as experienced in their environment, conflicted with their objectives of developing a meaningful learning experience. Thereon, Lincoln expressed,

> The biggest challenge that I still work at a public school that, they take a test at the end of the year, and the test score's what proves to be the most important thing is to prove if I'm a good teacher and if the students are good students and it puts a lot of emphasis on things that I would say don't matter all that much, but other people think it does. So, there are boxes that I have to take throughout the year or throughout the unit that are not necessarily teaching students how to be the best. But it's a skill that when they take the test it can help them on that and that's a really big challenge. (Pause) Yeah.

Lincoln was emphatic about his preference for using authentic assessments that allow students to exercise both their civics and communication skills.

> After the 2016 election, I saw a post somewhere that said, and it stuck with me, that really, this is what changed my teaching a lot, was that you can teach, first, this was a social studies teacher, you can teach that civic duty is voting every two years, every four years or every year however often. That's what civic duty is, or you can have civic duty be a conversation between you and your politicians. And that's when I realized anytime we do anything that matters, has it been an authentic opportunity for them to write and say something? That's when it really changed ...

Authentic assessment. Assessment of 21st-century skills is based on real-world tasks (Greenstein, 2012). For Lincoln, authentic assessment was a core part of his teaching experience. As part of the human rights units and in connection to the celebration of the 50th Anniversary of the Assassination of Martin Luther King, some representatives of the House of Representatives visited the school. As explained before, in the description of the first coding cycle, Lincoln invited his eighth-grade students to write real letters to the representatives about real issues that were important for them. Regarding that visit, Lincoln commented, "because they understood that, hey, we got important people coming, talking to us. This is important! So, it's one of those things . . . That's authentic!" It was an authentic civics experience. Students met a politician and began a conversation about social and political matters while the teachers used the process to assess the students' communication skills.

In the case of the sixth-graders, Lincoln and Jane wanted the students to choose a human rights topic that was meaningful to them or a human rights defender and create a final graphic novel. Thereon, Lincoln expressed,

> They had to research something that was going on about human rights to then turn that into a graphic novel . . . And some of them did it on hard copy, pen and paper, and some of them did it online. And that was the summative assessment. I gave them two options because we were running out of time at the end of year. So, they could take an event from the book, a civil rights event from the book and retell that event from someone other than John Lewis perspective. Which ended up being

> really cool because some people chose really cool perspectives. And some people did the different perspective and it didn't take as much research because I just made them find some credible sources about an event that they already knew. This made it a great way to differentiate the assessment. Some other people chose to do their own individual human rights defender or issue, and they had to then research that and then create a graphic novel, a short graphic novel about an event with that person or issue. For example, one student did a little crossover between Matthew Shepard and the individual who invented the rainbow flag for LGBTQ rights, I believe his name is Gilbert Baker. And so, she did like a little crossover between those two individuals. And it's just like, yeah that was really cool. And I had some individuals doing, a little graphic novel about DACA rights in America and immigration rights.

The graphic novel about DACA and immigration rights in America was done by a Latina student, Aylin López. See Figures 19 through 21. Aylin was able to demonstrate deep knowledge of the law and the repercussions in the life of a fictional character. She was able to create a setting, a problem, and an ending while showing a profound social empathy for immigrants. Being a Latina, she could relate to the topics studied in class and chose a human rights issue that was relevant to her and her community. Students demonstrated that, when given the opportunity, and after being exposed to pertinent topics, they could create meaningful presentations about relevant contemporary topics at a young age. They could create authentic products and respond in authentic ways while developing and demonstrating 21st-century competencies.

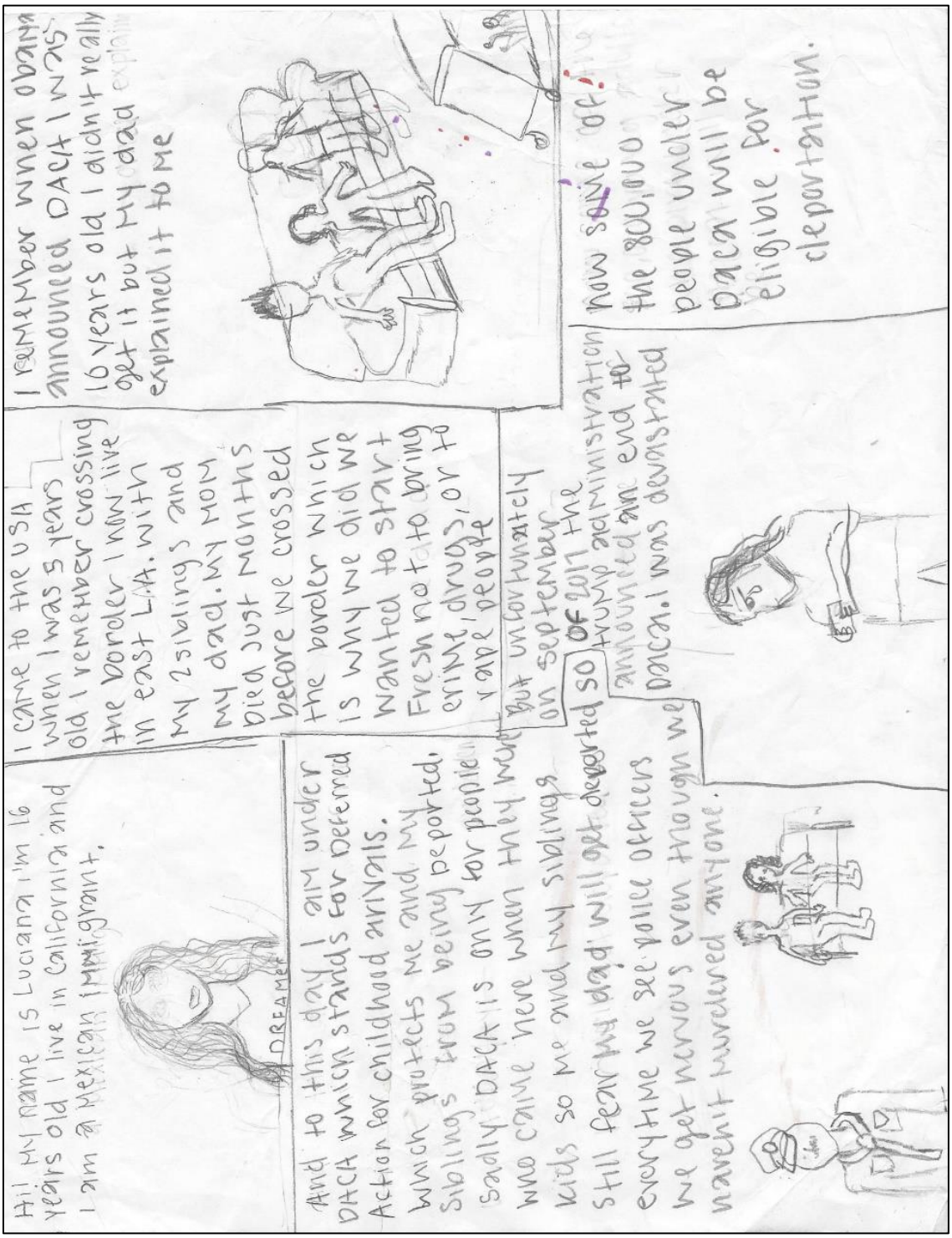


Figure 19. Aylin L.'s graphic novel page 1.

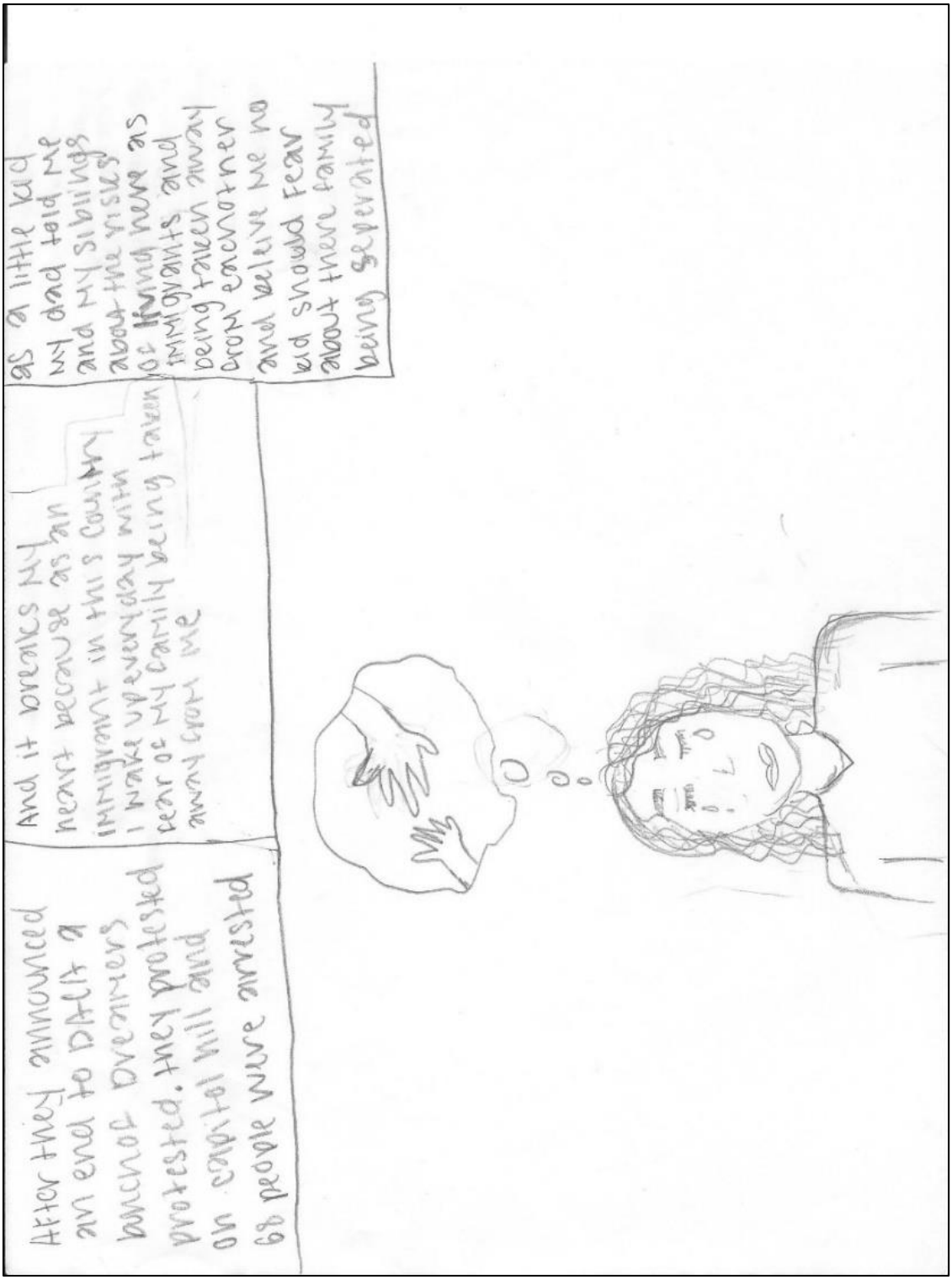


Figure 20. Aylin L.'s graphic novel page 2.

Figure 21. Aylin L.'s graphic novel page 3.

21st-century curriculum and instruction. P21 describes the curriculum and the instruction as one in which 21st-century skills are taught "in the context of key subjects and 21st century interdisciplinary themes" (P21, 2019a, p. 8). The curriculum focuses "on providing opportunities for applying 21st century skills across content areas and for a competency-based approach to learning;" it "enables innovative learning methods that integrate the use of supportive technologies, inquiry- and problem-based approaches and higher order thinking skills" and "encourages the integration of community resources beyond school walls" (p. 8).

The teaching and learning experience of this case study demonstrated all these characteristics. The 21st-century competencies developed throughout the unit were intrinsically connected to the key subjects of language, history, and civics. The main interdisciplinary themes of global awareness and civic literacy were demonstrated both by the teachers' plans and the students' experiences and artifacts. The core objectives were explicitly aimed to develop 21st-century skills such as critical thinking, communication, creativity, and use of information, media, and technology from an inquiry-based approach. Finally, the unit included using the resources available in the community, such as community groups for human rights and the visit of politicians. Four main themes emerged from the experiences described by the teachers and their pedagogical framework: constructivism, inquiry-based learning, metacognition, and student-centered approach.

Constructivism. "According to constructivism, knowledge is created subjectively as an interplay between one's prior experiences and conceptions and new ideas"

(Kuisma, 2017, p. 5). Both Jane and Lincoln declared that their pedagogical approach was constructivist. However, more than a declaration, the teaching and learning experiences they described along with their interpretations of their teaching practice align with this theoretical perspective. For example, Jane explained in one of the interviews how, by being the students' language teacher for three years she, was able to connect previous learning experiences to new tasks.

> If you've never done something before, your brain is firing synapses trying to find something to grab onto. And if they don't have that experience yet in sixth grade, then sixth grade is where we'll give them that experience. And then in seventh grade we can go back and think, "okay, remember when we read that graphic novel? Is there another way you could have done that? What are some other things we could have done?" And then kind of end it. Go through the back ends to get them rethinking about what they could be doing.

Lincoln added to this same line of thinking how he aimed to make the students be in charge of their learning process and base his teaching on inquiry. Thereon he said,

> At this school, and why I actually feel comfortable teaching there is because our school model and my own teaching lined up really well, where I want students to question what's going on and be somewhat the leaders of their own education. A lot of the ways that I run my classroom is where the students are not "in charge," but in charge of their own learning.

Inquiry-based learning. Inquiry-based learning (IBL) "allows students to make determinations about the problems, challenges and issues they investigate, helping move students toward meaningful engagement and deeper learning" (Buchanan et al., 2016, p. 24). Regarding the inquiry process followed in this unit of study, Lincoln explained,

> A couple of the questions that we started out, or some of the objectives we started out with, we wanted students to be able to answer "what are some human rights issues in the world today? Who are some of the defenders against oppression? In what ways do defenders call attention to their issues? And how do they call attention or promote justice and equity?" And then sort of our big topic or question

> was to what extent am I, as a student, a defender of justice with regards to human rights issues?
>
> We were going to be reading March: Book Three in the classroom. So, I started off the unit with civil rights, simply defining what are civil rights? What does "civil" mean? And then transitioning from that to what are human rights and sort of comparing how are they different? How are they similar? And that was sort of the beginning of the unit. We talked about what they already know about civil rights and human rights, and John Lewis or Martin Luther King. And what do you already know about civil rights and human rights. That is where we started from because . . . And this is one of the things about the civil rights movement, is what they called the nine-word problem, that people know the nine words about civil rights, they know "Martin Luther King," they know "Rosa Parks," and they know "I Have a Dream" and they think that's civil rights. And so, we did the entire unit on civil rights and I think I only use those nine words the first day of the unit. Because they already know that stuff, we didn't need to cover who Martin Luther King Jr. was or what he did. That was not the focus of our unit. Our focus was going to be how it was much bigger than just those two individuals and one speech. We did a bunch on what the civil rights were. We defined human rights. We looked at the Universal Declaration of Human Rights. We spent a lot of time looking at that, the thirty human rights of the UDHR [Universal Declaration of Human Rights]. In Jane's class, they were reading the book; we did a lot of work in my room on who were the big activists in the book. Who were the people that were helping John Lewis or doing their own thing? We spent a lot of time in my class learning about the organizations that were created or that are still around or that were created beforehand both helping and also, hurting.

Lincoln explained how the development of the learning process in this unit was based on inquiry. He explained how the students got into deeper grounds through inquiry, with a constructivist approach, departing from what was already known by them and moving to acquiring new knowledge through research. He continued saying,

> There were two websites that I gave them to start from. We started with Human Rights Watch.org and, the Robert Kennedy Speak Truth to Power, their curriculum, and that was the sort of the jumping off point for them to look up either individuals that were fighting to end a human rights issue or on the HRD.org [Human Rights Declaration] Website. It was issues, human rights issues, and they could learn a little bit about the issues from there. They had to research either an individual world issue, which was the confusing part, but they had to research something that was going on about human rights to then turn that into a graphic novel.

Jane also explained how they implemented an inquiry-based approach. She explained that

> Lincoln took the lead on most of that, but what we ended up doing was the inquiry cycle in practice. They were able to look at human rights issues that affected them and did a little bit of basic research. Then we reflected with them and now and told them they were going to find an activist of that issue. Then we were in the computer lab with all the kids doing research. We did several days of them researching. We had a really handy graphic organizer of this person on the issue. I think one section was just for, what more you need to know about this issue before you can tell this person's story? And then stuff about the person, and then people who helped that person. We had four panels that drove the kids into their research.

In summary, the experiences of these two teachers show how they designed and implemented constructivist, student-centered learning experiences, from an inquiry-based approach, to promote students' creativity, critical thinking, communication, and information, media, and technology skills.

Metacognition. Metacognition was defined by John Flavell in 1979 as "the ability to manage and monitor one's thinking" (as cited in Greenstein, 2012 Chapter 5, Metacognition section, para. 2). For Jane, developing metacognitive capacities in the students was crucial.

> At the beginning of every unit, we do a metacognitive process. So, individually I will have the kids reflect on a topic or concept. If it's human rights, for example. So, then we'll have each kid list five to seven things that they think they know about the topic. So, then we put everybody together, and we make this massive list of everything everyone knows, so, it's not cheating, because when we're collaborating my knowledge can become your knowledge, and vice versa. So, we make this master list of things that we know, and then from there we sort of start to think about, "okay, so, what am I shaky on? So, this person knows this, but I don't know anything about that, so, I'm shaky on that. So, maybe we need to delve into that a little bit . . . "

When asked in which ways the curriculum in her classroom helped students develop 21st-century competencies, Jane answered,

> Well, let me go to metacognition first, because I think, that's the thing I prioritize probably the most. On the idea level, we are living in a day and age where as much as we want to pay lip service to the fact that there are multiple ways of knowing, ultimately what we as teachers are tasked to do is create a situation where what the kids know is measurable in really only one way, which is in standardized testing. And so, metacognition to me is the most powerful disruptor of this sort of data driven mania that we're in. Because it puts the power back in the hands of the students to understand what they know and also what they don't know. And so, I think metacognition is absolutely crucial particularly when you are attempting to build confidence of students who are not successful in traditional assessment. So, "okay, you bombed at a standardized test. Let's go back and think about what you do know. If someone would have said, what do you know about this passage, what would you have said?" And then start building from there. Because students learn very quickly where their deficits are in traditional assessment. Metacognition to me is the antidote for that. It allows students to really begin to claim their power as thinkers, and as critical thinkers of a text. So, I try to develop that and do it daily. Let's find out what we know, what are we unsure of, where do we think this is going, and then to kind of move forward from there.

Jane also reflected about how the metacognitive skills improve by being exposed continuously to the process of thinking about one's thinking, and the changes and differences that she could identify between her sixth-graders and her eighth-graders. She explained,

> And again, that metacognitive . . . "Okay, so, I'm making this decision as the storyteller. Why am I making this decision?" I also, say, I think that's a functional little bit of the age. Because in general, by eighth grade, after we've done sort of thing for several years, they're much better at being able to be like, "I did this, this is why I did this. I did this because we read story x and I liked that the author did that, so, then I tried to mimic that." But it really wasn't that nuanced in sixth grade, unfortunately.

During the online forums, the students were asked about which 21st-century competencies did they consider important in their development as a student and a future professional; how the human rights unit helped them develop any of those skills; which skills did they think they improved by using ICT; and which of the skills would they like to improve or learn more about in the future (Appendix H). By answering these

questions, some students provided evidence of having developed them in class or showed an interest in developing metacognitive skills in the future. For example, Elizabeth J. said, “I just reread a lot of the information and doing that really helped me understand and comprehend what I was reading about and what I did and did not need to write about.” Elizabeth was rereading information. Just the act of rereading a passage denotes an active process of trying to make sense of the text, acknowledging not being successful at first, and deciding to retry. Elizabeth was managing and monitoring her reading process. When asked about it during the forum, she was developing her metacognitive skills in a conscious way even further. In the case of Liv M., she expressed,

> I would want to improve and learn more about metacognition because I would want to use it more and learn more about how it can help me more in the future. Also, I would want to improve and learn more about global awareness because we don't learn a lot about that in every class.

As these students’ answers demonstrate, even at a young age, students were able to make decisions about their cognitive development and identify which skills did they consider important as learners.

Student-centered approach. The experiences shared by these two teachers provided evidence of learning activities and teaching practices based on students' interests, choices, and preferences. The inquiry process started with what the students already knew and moved forward based on what the students wanted to learn. When describing how did she use metacognitive processes at the beginning of the unit, Jane explained that it “helps contextualize what direction I think the group's going to go in, because it will vary from class to class, what kids are interested in and what they're not.”

Also, Lincoln stated about the topics of his class, “I feel like the content of your teaching becomes something that the students naturally want to pursue or to inquire about.”

Lincoln’s perspective regarding the relevance of the content was confirmed by several students. Ashley R. said that “It was interesting and important because it may have been one of my family members.” Likewise, Gracelyn-May recalled, “making a graphic novel about a civil rights movement event or a time when a civil right was being violated, it was very fun. It was important because I know someone who was racially discriminated.” Other students had similar thoughts. Jocelyn F., for example, stated that “This unit was very interesting to learn about because I also learned about discrimination and that’s my favorite topic because it’s really interesting to hear all those struggles people had back then.” And Liv M. added,

> This topic is important to me because I have a mixed cousin who was bullied at her school because of the color of her skin. Yes, I think this topic is relevant because people need to know how people were treated and why they shouldn't do the same.

In conclusion, teachers and students agreed that the content as well as the assessments considered the students’ preferences and interests, and the human rights topics and issues the students were managing where relevant to them.

21st-century learning environments. P21 describes the 21st-century learning environments as those in which the learning practices, the human support, and the physical environments support the teaching and learning of 21st century skill outcomes (P21, 2019a, p. 9). P21 also states that 21st-century learning environments support professional learning communities, learning in relevant, real-world, 21st-century contexts (e.g., project-based or other applied work), equitable access to quality learning tools,

technologies and resources, architectural and interior designs for group, team and individual learning, and the expanded community involvement in learning, both face-to-face and online (p.9).

Several of these elements were evident in the case studied. The school supported professional learning communities providing time during school hours for teachers to meet, share resources, and plan together. As already described, the unit of study developed by Jane and Lincoln was embedded in the real world. 21st-century contexts and issues related to racial discrimination were the focus of study and the students were able, not only to study what happened during the civil rights movement in the United States, but to study how those facts relate to similar contemporary issues.

Regarding the access to technology and resources, all the activities planned by teachers were implemented during class time, so the students would have equal access to computers and Wi-Fi. On the other hand, considering the diversity of students' needs, the teachers allowed for flexible seating and grouping. Such flexibility allowed for both individual and collaborative work, depending on the students' preferences and needs. In this regard, Jane commented,

> I just let it, that's the kind of thing that I don't direct. They're sitting at their tables and I'll say "okay, this is the assignment. Everybody has to turn one in," and sometimes they'll work together and sometimes they won't, and I'm okay with that.
>
> We do have a little spot. But I have a standing desk in case, like you know, in middle school they get very fidgety. So, there are sometimes that I'll put a kid at the standing table to work because they're a little off. And then I also, have a seated area. Also, I have a low table and pillows on the floor. And so, some of them like to sit on the floor to do their work, but then that's sort of where our reflective area is. So, you know, if you were working over there, then people knew you didn't want to be bothered. They really want to work by themselves.

> Again, another nuance for us is that so, many of the kids at this school have experienced ongoing trauma. And so, sometimes you just need to like sit alone and like get your sh*t together. [LAUGH] You know what I mean? Like, you've just got to sit and so, that was a space for that, too. So, a space where when you were there, you were in a bubble. And that wasn't for anyone else to go over and talk to you that you were there for whatever reason. It was a very effective, it was very effective, like that. "This is where I'm going to go when I can't do it. And I want to be here, because I'm already here, and I want to listen, and I want to learn, but I can't do it."

So, Jane provided flexible arrangements in the classroom to fulfill different needs. She was not expecting for all students to be successful following the same path. She provided then different paths to help all students be successful in her class. She adjusted the learning environment to make the development of 21st-century skills possible from a student-centered perspective.

Finally, these two teachers integrated resources from the expanded community in their unit about human rights. They included examples of previous students' works, online resources, and resources from the human-rights community organization located near the school. In this sense, Jane expressed,

> At the RK Center for Human Rights, they have sort of these big umbrella, human rights themes. So, then kids could go in and then organize underneath those themes, or sort of the champions of those issues. And so, we used an example from last year, this year's seventh graders, what a student did.

The experiences of these two teachers were complemented by previous experiences that the students had at school. For example, all students at the end of fifth grade plan and implement a project about a social issue as an example of a real-world, contextualized, project-based learning, and applied work at school (P21, 2019a). For that reason, Lincoln said,

> At this school, that's not something out of the ordinary. I mean, one of the reasons why I was OK with not pushing so far in doing that [referring to inviting students to take an active social action during the unit] was because all the sixth-graders had the previous year done a big social action project as fifth-graders. And after the first year I did it, I realized that they understand social action.

Lincoln then made curricular decisions based on his students' experiences instead of in an isolated manner. He aimed to his students' gaps instead of reinforcing what they already knew.

Even when the teachers described many accomplishments with the implementation of this unit, they also faced challenges, especially related to the availability of digital technology. For example, Jane explained how there was no significant effect in the inquiry process if the students did not have access to the iPads or computers for a day while doing research in the Internet. They could use the time to reflect upon their lines of inquiry and make decisions. However, she explained that the problem was when they could not access the devices for several weeks because of standardized testing at school.

> We can think through where we might need to go next, what new lines of inquiry have opened as a result of what we did. So, one day without the iPad cart isn't a huge thing. The biggest struggle, the biggest struggle for us is when the iPads and the computer lab are taken away because of testing. That really disrupts the unit. Because we're talking three weeks where we don't have access to iPads or the computer lab. And with the policy of no cell phones, it makes it extremely challenging to do anything with technology.

In conclusion, many characteristics of a 21st-century learning environment were present in this case. However, the experience of these two teachers was that the use of technology was subjugated to standardized testing at school, making it difficult for them to develop learning activities that depended heavily on digital technology.

Critical Literacy

Critical literacy is the "active questioning of the stance found within, behind, and among texts. Critical literacy is an emancipatory endeavor, supporting students to ask questions about representation, benefit, marginalization, and interests" (Stevens & Bean, 2007, p. 12). Jane and Lincoln used teachable moments and other instances in the curriculum to foster critical literacy. Jane continuously invited students to select books of their interest to read independently. She provided time in class for students to explore different topics and genres freely, without having any attached assignment that students needed to do. However, the books were carefully selected by Jane to guarantee that they were relevant to the students' context and related to contemporary social issues that students see in the news and social media. As a result, students connected their readings with the topics of the unit and found similarities in terms of the challenges of the civil rights movement period and the students' present time. On this regard, Jane proudly said,

> And then to be able to translate that into, "well, I saw you reading this independently, so, this happens to John Lewis. So, you should try to find that page because it's a really awesome thing that happened." And so, to be able to see them make connections, and again if we're trying to build truly literate lives, to be able to show them that there is not a disconnect between what they are enjoying reading and what I'm trying to have them read.
>
> And, they were very thoughtful towards the end, they were making lots of connections, cause we worked hard to bring in books this year for their independent reading that touched on police brutality, that touched on homophobia, that touched on poverty, that touched on all of these things and so, to watch them make the connection, it was an awesome year. It was an awesome year to watch them make those connections.

In Lincoln's case, he stated that for him it was crucial for students to understand that there are different perspectives about social and political issues, and to be a critical thinker, students need to begin by recognizing that others may think differently.

> I think, when students become critically literate, just becoming critical literate, you have to learn the process of looking at a text with a critical mind and realizing that this person that created it, has a different view of the world than me. Doesn't mean it's right or wrong. It's just different and so, then by viewing that text with a perspective other than your own you're able to sort of understand the world. You're becoming a little bit more critically literate, . . . The way in my class we try to do that is that I try to put text in front of them that they haven't seen before or have them look at an event through someone else's eyes because they're becoming better citizens by doing that.

Lincoln used the situation about football players kneeling during the national anthem to contextualize a lesson about the meaning of flags in a critical way. He used multimedia resources and different texts to expose his students to the topic critically.

> So, we did one small . . . it was like a two-day thing, and it's now back in the news, where the NFL, their policy on the national anthem and whether players could kneel or not. I did, I've done these things as critical literacy invitations and it's essentially giving students multiple different sources, multiple sources on the same topic or related to the same topic and sort of having them in a group of four or six have a discussion about whatever they wanted to. And so, I did one on the treatments of flags in America, and there were a couple different things that I gave them. One of them was the Confederate flag and how it's been treated in the state houses in the most recent times and how in some places it has been taken down, some people were getting upset about that. Flag burning situations where some people were very upset, some people in the United States were getting upset about the Confederate flag being taken down, and some of our students didn't know what the Confederate flag was. Some other things that it included were the national anthem and the N.F.L. players taking a knee during the national anthem and a couple, there was one article about flag burnings and how that was a form of protest and also, a form of free speech and so, that was, some people were upset. But all these texts sets were included, and it was given to them in a way that they can flip through, there were some pictures, there were some articles they flip through and they read what they wanted to. And then, it was just a discussion. And then, after the discussion, they had to then create something that their group learned or discussed.

> The first day it was looking through the documents and the second it was discussion and creation. And some groups discussed what the Confederate flag is. One student knew a lot about it and the other people in her group didn't and so, she was informing them but then at the end of it the whole group knew what the Confederate flag was and what it why some people were so upset about it. Other groups wanted to figure out where the rest of the class was on the NFL kneeling situation and so, they went around and asked what they thought, "you know, should people be able to kneel? Is that offensive to soldiers or whoever?" And it was an opportunity where students maybe didn't have this understanding or awareness of the flag being important, but the little two-day thing gave them an opportunity to sort of see the different meanings of flags and why it did matter to some people or why they thought no one should be getting this upset about some of the old players taking a knee.

This excerpt shows several characteristics of the way Lincoln developed critical literacy with his students. First, he connected an authentic situation occurring in society and linked it to the objectives of his social studies class. Second, he did not have preconceived answers; he mainly designed exploration activities for students to discover and inquire by themselves. He led then into a cycle of critical thinking and critical reading of different types of media to show them that there may be different perspectives about an issue. Finally, students felt motivated to respond critically. About the students' responses, Lincoln commented, "It was really powerful to see them and then they wanted to inform other people about what they experienced in their class."

Besides the teachers' perspectives, students also perceived critical literacy as valuable. Ashley R. saw it as directly related to her identity, "I learned what people of my race had to go through in Alabama and in some other states." Liv M. considered that the human rights unit was meaningful and relevant. During the fourth online discussion forum, Liv M. said,

> Other things I learned from this unit that are meaningful to me are how the people treated the people who died. In March: Book Three (or a short film. I don't

> remember) there was a woman who's son died and he was wounded so badly, you couldn't tell who he was. She had the casket open so everyone could see what they do to African American people.

These students demonstrated that they could take a stance based on another person's point of view and be empathetic. Lincoln described in his interview how a student wrote a short text from the perspective of a table that was part of the fifth-grade's exhibition about social issues. Later, that same student took the perspective of the rainbow flag for her summative assessment.

> The girl that actually brought up the table [example], then wrote, she did her graphic novel from the perspective of the rainbow flag that Baker created. It was so incredible! She wrote from the perspective of the pink color, and the purple color, and you know, it was like how they all came, and it was just like, this is a beautiful thing that she's writing in. And, she's writing it about a flag and from the perspective of the flag because we were able to learn from each other and like talk about what it means to tell someone else's story. That was, that was a really big thing for me to see them as writers, and being able to create this backstory and making up a historical fiction story . . . So, I wanted them to think about an event from someone else's perspective. It is what I wanted them to do, becoming critically literate.

In summary, these students had a set of learning experiences that allowed them to read critically by considering, analyzing, and evaluating different perspectives to then respond critically by writing. Choosing readings freely became part of the process and relating those readings to the book that was assigned enriched the learning experience. The pedagogical framework of the teachers and their objectives were clearly aimed to develop critical thinking and critical literacy skills. As Lincoln declared, "in America, in 2018, all of these things make it seem like critical literacy is the most important thing that I can teach students."

Critical Democracy

"Critical democracy . . . moves beyond the workings of political institutions to promote a form of associated living centered on a moral commitment to the public good… critical democracy explicitly promotes values of equality and social justice and works not only to address, but also to redress, issues of oppression" (Montgomery, 2014, p. 200). Discussing social issues in class opens the door for the students' engagement and civic active response. However, for Jane, the social action of the students has to be intrinsically transformational and not merely mitigative. This perspective of the civic response of the students is based in the critical democracy approach. For Jane, it is not enough to take a superficial or insubstantial civic action, it is necessary to deepen in the roots of the social inequities and act to address them:

> One of the things that we talk about as service is, what is mitigating service and what is transformative service? And so, when we are [discussing], —because the kids use the UN 2020 goals—, what are the issues that are continuing to be pervasive in our society? So, homelessness, hunger, food insecurity, water insecurity. So, when we get to, let's say food insecurity because that's something that kids always gravitate towards because we talk about it so much when they're in elementary school. And so, when we talk about service for that, the first thing they always want to do is a food drive. So, when they get in middle school, that's when we start to say to students, that's mitigating service. You're not actually doing anything to address the problem except putting a Bandaid on it. You haven't addressed any sort of things that are systemic about food insecurity in our city or our state or our country or our world. We're not doing anything that actually helps anyone beyond the next meal. And so, how do we look at food insecurity from a more transformative lens, becomes the question. So then, we start to think about how do we work to enact policy?
>
> So, just for an example, one of the students this year that I worked with is very troubled by police violence against black and brown people. And so, we talked about what can she do, what should her service be. So, one of the service pieces she talked about was that maybe she wanted to do a night walk around the neighborhood, around the school, with pictures of black and brown people who have been killed by police officers. And I was like, all right that is very beautiful

> and very powerful, but it's a one-time thing. So technically that's mitigating service. So, then we got to talking about it, and so ultimately, her service was that she did a letter writing campaign to the mayor's office where she wants people who are in police training to have to go through extended diversity training. So, they need to be working in communities of color for several months before they're allowed to have a badge. So then at the end, then she got frustrated, cause she was like, "I don't know if he'll listen to me? I don't know." But at the same time, that's something that is a long-term fix. So, she could have done the mitigating service that she picked, and she doesn't know if it's going to go anywhere, but at least the seed is planted that those are the kinds of service that we want the kids to be thinking of, so that when they are older, when they can vote, that they will be asking tougher questions.

The example Jane described with the eighth-grade student demonstrated the perspective of these two teachers to move beyond civic literacy, beyond knowing, valuing, and exercising citizens' participation in elections to actively advocate for social justice. On their part, sixth-grade students showed, at different levels, how they are beginning to develop an active perspective of their participation regarding social issues. When asked how the unit motivated her to be an agent of change, Ashley R. answered "It motivates me to protest about something I believe in by using peace instead of violence." Gracelyn-May said, "All of it was beneficial because I have never recall been aware; now I am very aware of racial discrimination. I love the fact that people gave up their life to try and stop racial discrimination even though it is sad." Lia also commented, "I feel bad for everyone that had to be a part of that, so I would want to help them," and Neymar J. expressed, "this motivates me to stand up for the people that are getting mistreated." Similarly, other students also shared thoughts about their willingness to be active citizens. Saoirse said, "this unit motivates me to speak up when I see an injustice. It's important to do that to make the world a better place. This unit was really important and I learned that you have to be brave to be strong and that you have to stand up if you

dissagree with someone's opinion." Finally, Jerome added, "This unit motivates me to be an agent of change because it shows what has happened in the past and it shows us how to prevent things like slavery happening in America again."

Lincoln shared another experience that students lived during this period as an example of practicing critical democracy. He explained how the activities to celebrate the 50th Anniversary of Martin Luther King Jr.'s death were initiated by the history teacher of a nearby high school. Her objective was to give the students the opportunity to participate in a meaningful and authentic event regarding human rights. In the process, a community organization and some politicians wanted to subtly take control of the ceremony and decide who would attend. They proposed that only a few students from each school, the middle and the high school, could be invited. Lincoln, Jane, and the history teacher were very disappointed because it would be very difficult to decide which of the students would attend after dedicating a whole unit to the topic of human rights. They could not hold the news anymore and shared it with the students. The students initially proposed to send a letter to the politicians, the community organization, and directly to John Lewis. However, after debating about the idea, they concluded that a short video would be more powerful. Students ended up creating a video clip advocating for their right to participate in the event. In the video, the students recalled that they should be heard, that their voices were equally important, and that they deserved the chance to be invited to the event. As a result, the students were all invited to the ceremony, both middle-school and high-school students. The event was a success and the audience were mainly students.

This experience of how students can use information, media, and technology to advocate for their rights is a vivid example of critical democracy at school. Lincoln expressed that it is possible when students are supported by their teachers.

> Overall, students see themselves as people that can, people that have power, that their voice matters. And even if it's just with me, because not everyone outside of my classroom is going to think that a thirteen-year-old voice matters. But it is really easy for middle school teachers to not let students' voices matter. So, that's one of those things that I'm constantly aware of, my own biases, to try and make sure that I listen. And then, that lets the students know that their voice matters if they've got an adult to listen to them. Through all the units, or the units that matter, students get to see that they have a say in the world.

Research Questions: Results

The interviews with Jane and Lincoln and the artifacts collected provided enough data to answer the first research question about their experiences using ICT and critical literacy to promote 21st-century competencies and critical democracy. Through this case study I found that the critical literacy teaching practices of these two teachers enabled students to develop a series of 21st-century competencies as described by the P21 Framework. Evidences of students' creativity, communication skills, critical thinking and problem solving, collaboration skills, information, media and technology skills, global awareness, civic literacy, and life and career skills such as flexibility, initiative, leadership, and cross-cultural skills were demonstrated by the teachers' and students' reflections and the students' classwork. The teaching experiences were inquiry-based, student-centered, and had a constructivist approach. The teachers implemented authentic assessment strategies, based their teaching on 21st-century standards as described by the P21 Framework (P21, 2019a), and created a 21st-century learning environment to make possible the development of 21st-century competencies for social change.

The second research question regarding the teachers' reflections about their critical literacy teaching experiences using ICT was answered with data from the interviews. Both Jane and Lincoln reflected about their achievements and challenges in using ICT and how it affected students' learning. They reflected about their objectives, strategies, pedagogical beliefs, and the implementation of the curriculum. Their reflections revealed how their teaching practices promoted the development of 21st-century competencies in their students with a social change purpose by using ICT as part of critical literacy activities.

Finally, the third research question regarding the students' reflections about their learning experiences using ICT to develop knowledge, 21st-century competencies, and critical democracy was answered through data gathered from the online discussion forums. Students had the opportunity to reflect about their learning process during the unit about human rights that they had experienced and how it helped them develop 21st-century competencies. They acknowledged many of the skills described by the P21 Framework during the online discussion forums and the skills were also evident through their classwork.

Summary

The purpose of this qualitative case study was to examine the experiences of two middle-school teachers and their sixth-grade students as they used critical literacy strategies and ICT to promote 21st-century competencies and critical democracy. The teachers and the students had the opportunity to reflect on their learning and teaching practices using critical literacy and ICT to promote 21st-century competencies and social

change. During the first coding cycle the conceptual framework was used as reference for the analysis of data following an analytic induction approach. However, additional elements contained in the P21 Framework started to emerge. For that reason, in the second cycle, the whole P21 Framework was used as reference for the analysis in addition to the conceptual framework.

The teachers' and students' experiences seemed to support the framework of the Partnership for 21st-century Learning (P21). Both the 21st-century student outcomes and the support systems were reflected in the data analyzed. The cohesiveness of the framework was also evident in the data collected. The teachers made multiple references to the relationship among the framework's components when describing their teaching practices and experiences. Both sections of the framework, the student outcomes and the support systems, emerged as concepts during the analysis. Students' experiences and artifacts showed how students developed learning and innovations skills (critical thinking, communication, collaboration and creativity), information, media, and technology skills, key subjects and 21st-century themes, and life and career skills. Teachers' plans, practices, and experiences showed how the curriculum and instruction and the standards and assessments were coherently designed to foster 21st-century competencies. Finally, the professional development practices and the learning environments promoted at school supported the students' development of 21st-century competencies. In the next chapter, these findings will be discussed, and conclusions and recommendations will be provided.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative case study was to examine the experiences of two middle-school teachers and their sixth-grade students as they used critical literacy and information and communication technology (ICT) to promote 21st-century competencies and critical democracy in their language arts and social studies classes. The objective was to acknowledge the teachers' and students' perspectives regarding their teaching and learning experiences and provide them an opportunity to reflect on them. The results of this study contribute to the growing knowledge about how 21st-century competencies can be developed for social change in middle school. More specifically, the findings show how learning opportunities for the development of 21st-century competencies were experienced in an International Baccalaureate (IB) public school with a high enrollment of low-income and minority students.

The key findings seem to support the P21 Framework. A significant amount of the competencies described in the P21 Framework were identified through the teaching and learning experiences shared by the participants, which I collected through interviews, online discussion forums, and artifacts. Both teachers and students made numerous references to the development of different 21st-century competencies from both the 21st Century Student Outcomes and the 21st century Support Systems sections of the P21 Framework.

I also found that the competencies in the framework were interrelated and their development was intertwined as argued by the P21. The data showed that it was difficult

to isolate the competencies; the students seemed to develop the competencies simultaneously and in an interconnected manner. However, it seemed that to develop 21st-century competencies for social change, a human rights' perspective would be needed, and such perspective is not part of the P21 Framework. As a result, I updated the conceptual framework of this study. In this chapter, I present the interpretations of findings, discuss the limitations of the study, offer recommendations, and identify implications of the results.

Interpretation of Findings

I analyzed study data using the conceptual framework I designed for the study. In the conceptual framework, I assumed that, from a critical pedagogy and critical democracy theoretical approach, critical literacy learning experiences in which ICT were integrated would contribute to the development of 21st-century competencies for social change. For that reason, the Learning and Innovation Skills (4Cs) and the Information, Media, and Technology (IMT) sections of the P21 Framework were included in the conceptual framework. I expected that students exposed to critical literacy experiences would develop 4Cs skills, and if teachers integrated ICT in their critical literacy teaching, I expected that students would develop IMT skills. However, what I found during data analysis was that students not only developed 4Cs and IMT skills, but also many other skills presented by the P21 Framework.

Both P21 Students Outcomes and P21 Support Systems emerged as significant concepts during the analysis of data. For that reason, I organized the codebook and subsequently the results presented in Chapter 4 following the same structure of the P21 Framework, which consists of two sections, the Students Outcomes (multicolor upper arch) and the Support Systems (lower blocks section) as shown in Figure 22.

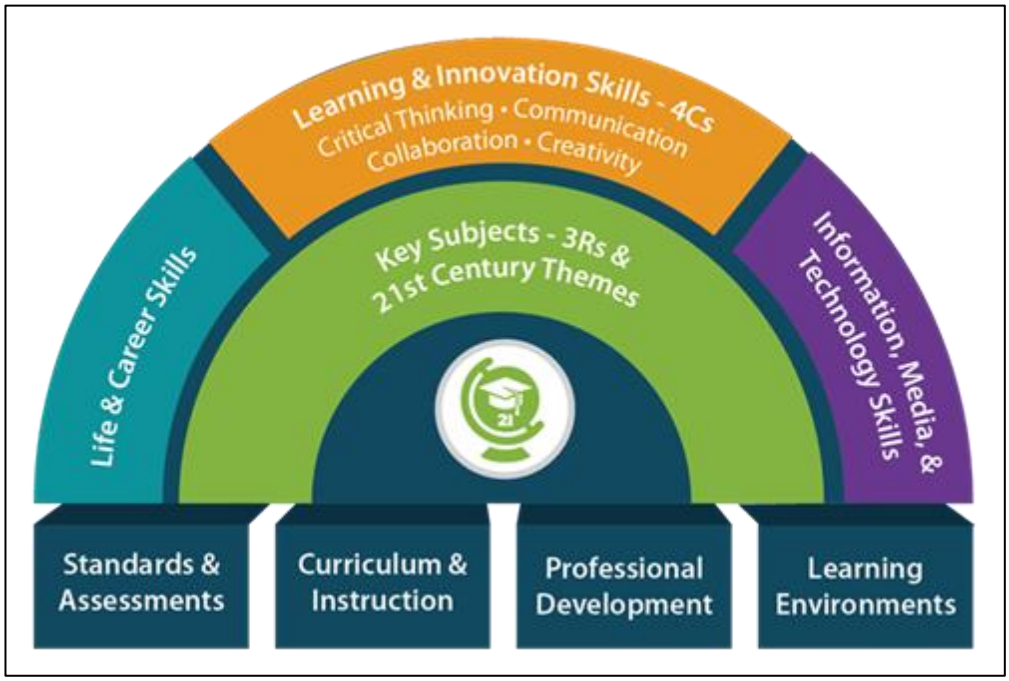


Figure 22. P21 Framework for 21st-Century Learning. (P21, 2019). Used with permission of Battelle for Kids and the Partnership for 21st Century Learning. © 2019, Partnership for 21st Century Learning, a network of Battelle for Kids. All Rights Reserved.

In the following section, I first interpret findings related to the P21 Framework as a cohesive structure, and then interpret findings regarding the student outcomes and the support systems. Finally, interpretation of findings regarding the participants' reflections about their participation in the study will be included.

The P21 Framework as a Cohesive Structure

The data collected indicated that the P21 Framework is a cohesive structure in which "all the components [are] fully interconnected" (P21, 2019a, p. 1). Consistently, the data showed how the elements of the P21 Framework appeared intertwined and in direct relation to each other. For example, when asked if using ICT in her curriculum fostered students' 21st-century competencies, Jane said,

> Particularly communication technology [does]. In the graphic you sent [reference to Appendix F], information and communication technology was one spoke, like it was one part of it. So, I was thinking about how to me, I feel like technology is sort of embedded in all of those pieces. It's a subset of all of those categories. And so, I think about to go back to the example about the two girls, who wrote the story together. On its face, it was a 21st century competency and that it was developing creativity and leadership. But also, the medium was through this technological piece. I think technology is absolutely necessary for us to be able to do things. The other thing I think information technology can do, is that it gives students up-to-date information about sort of these continuing problems.

In this excerpt, Jane expressed how in one activity like writing a text collaboratively, two students were able to develop their creativity, leadership skills, and communication and information skills due the nature of the activity. Another example of that interconnection of the P21 Framework's components is shown in another comment also made by Jane,

> We really want to see our students mastering metacognition. Or I don't know that you could actually master metacognition, but metacognition is a priority in our units and in our lesson planning and also that piece of global awareness. I think those two really span creativity.

Jane visualized metacognition, global awareness, and creativity as linked; fostering one of them contributes to fostering the others. From her point of view, when

students developed 21st-century competencies, they did it in a holistic way instead of discretely.

The P21 Framework: Student Outcomes and Support Systems

The results of this study indicated that critical literacy learning experiences may help students develop 21st-century competencies. Through critical literacy, both Jane and Lincoln were able to help their students develop learning and innovation skills such as collaboration, communication, creativity, critical thinking, and problem solving. Also, through the integration of ICT, students developed their information literacy, their ICT literacy, and their media literacy. Similarly to Swaggerty, Atkinson, and Cannon (2015), in this case study I found teachers enacted the belief that students should use different modes of literacy to read, create, and share their ideas. Students used media to research about human rights, to share their historical fiction literary pieces, and to exercise their right to participation.

The experiences of these two middle-school teachers seem to support the conclusions of previous researchers regarding how an effective integration of ICT depends more on the teachers' pedagogical beliefs and their curricular objectives than the type of technology used (Alexander, 2014; Arancibia & Badia, 2015; Badia et al., 2015; Hsu, 2016; Truong-White & McLean, 2015). When inviting their students to create their historical fiction pieces, multimedia resources were just a means and not an end. For that reason, it was easy to adapt their use to the needs and preferences of the students, allowing for each of them to select which medium to use. In this case, the teachers'

practices were evidence of a strong curriculum based on a solid pedagogical approach in which ICT was just a supporting tool.

Similar to the results of Manfra and Hammond (2008), results from these two teachers resemble the "facilitator" teaching style in which teachers challenge students' conceptions and promote their critical thinking. Jane and Lincoln constantly challenged students on their perspectives about issues. They were invited to research, to analyze and evaluate, and to consider different point of views. Metacognition and critical thinking were strongly promoted by these two teachers, contributing to higher-order thinking in their students. On the other hand, the results of this study seem to support the notion that teachers who integrate ICT tend to be experienced teachers with high self-efficacy regarding their digital skills (Area-Moreira et al., 2016; De La Paz & Hernández-Ramos, 2013; Herro et al., 2017). "Well, I am obsessed with, I have everything on Google Drive," said Jane. She would tell her students, "when you leave the halls of our school. You'll be in a Google environment in your real life. In my real life, I'm in a Google environment as are most of the adults I know. If I'm going to cultivate a literate life, I should be giving them the tools now." In conclusion, as in Ceker and Uzunboylu (2016), Chai et al. (2013), and Hsu (2016), these teachers' beliefs, competencies, and contexts were essential for their effective integration of ICT in the curriculum. Like Hsu (2016), these constructivist teachers had high self-efficacy and designed critical literacy experiences to develop higher-order thinking.

Finally, Ruggiero, and Mong (2015) found a close relationship between the teachers' daily classroom use of ICT and their pedagogical practices and beliefs.

Teachers who showed strong student-centered activities using digital technology also showed student-centered practices in other learning areas. Like teachers in Ruggiero and Mong's study, these teachers developed student-centered activities using technology in the same way they foster student-centered activities in other instances of their teaching practice.

Regarding how using critical literacy and ICT contributed to students' motivation and engagement, several findings in this study are relevant and comparable to previous research. In his study, Alexander (2014) found that some students engaged with technology but not with the task; others engaged with the task but not with technology; and others engaged with both. In this study, I found that all students engaged with the task but not all with technology. The students made comments like it was the "best unit of the year" or that "this was important." The content and the context of the human rights unit was evidently pertinent to the students' reality. As Saoirse noted, "People need to realize that while we may have different cultures and different skin colors, we're all human." "This [unit] motivates me to stand up for the people that are getting mistreated," claimed Neymar. These words exemplify how the students got engaged with the unit's content to the point of making it part of their life's perspectives. In summary, the content was highly valuable to all of them, but the use of technology for the purpose of sharing their ideas was not necessarily valued because not all of them chose a digital medium for their literary creations.

The experiences of these teachers and their students revealed a significant number of elements of the P21 Framework's Student Outcomes. Interviews, online forums and

artifacts showed how key subjects and 21st-century themes were evident in their learning and teaching experiences. Interdisciplinary themes such as global awareness and civic literacy were part of the teachers' objectives and were recognized as learning goals by the students. Learning and innovation skills (4Cs) such as creativity and innovation, critical thinking and problem solving, and communication and collaboration were repeatedly mentioned by the participants. Students and teachers declared how the students' IMT skills were developed through inquiry-based activities. Students used digital technology to access and evaluate information, use and manage information, analyze media, and create media products. Beyond those expected results, students also demonstrated life and career skills such as flexibility and adaptability, especially when their plans or the teachers' plans were not functional. They had to develop initiative and self-direction to manage their projects and present their literary products. They also developed leadership and responsibility through collaborative work, and developed awareness of the importance of social and cross-cultural skills due the nature of the human rights unit.

On the other hand, a significant number of codes related to the support systems emerged from the gathered data. I noticed that the teachers were implementing a curriculum solid in promoting 21st-century standards like deep understanding of concepts, using real-world data, allowing for multiple measures of mastery, and building understanding across and among key subjects and interdisciplinary themes. In terms of the assessment of skills, the teachers integrated meaningful formative and summative assessments, and in some cases the assessment was an authentic, real-life experience.

Regarding the 21st-century standards and the assessment of 21st-century competencies, the P21 Framework's definitions include the engagement with real-world data and tools as one of its standards (P21, 2019a). However, in the assessment section of that same document, authentic assessment involving real-life situations is not explicitly included. Lincoln repeatedly expressed how important it was for him to design and be attentive of real-life situations in which his students could intervene authentically while developing his critical thinking and communication skills. Exploring others' perspectives and sharing their personal point of views regarding the athletes' kneeling during the national anthem or writing letters to the senators about critical issues are two examples of how this teacher made assessment a real-life related experience.

Other support systems, as defined by the P21 Framework, emerged powerfully in this study case, as for example, the professional learning community (PLC) experiences. In my original interpretation of findings, I thought that one of the key elements to the effectiveness of the teaching practices of these two teachers was that they had time to plan together during the school day and that there were PLC time allocations for teachers to get together and share ideas and do projects together. However, when sharing this interpretation with the participants, they clarified that the key element for the effectiveness of the teachers' practice in the middle school was their self-initiated efforts to overcome their challenges as teachers. They narrated how the middle school faculty met during the Summer on their own to discuss the problems they were facing, find commonalities, and define a common course of action to help students be successful. They met continuously, shared time together, and developed genuine relationships. That

relational foundation allowed for problems to be discussed without being adversarial. Teachers would have the luxury of challenging ideas without challenging the person. These teachers built a strong community based on respect. However, even when that experience was not officially produced by the school, it constituted a PLC because the teachers were sharing their expertise and using a common space to design alternative solutions to their problems. This experience of working together in a PLC demonstrated how the teachers were developing their own skills as critical thinkers, problem solvers, and innovators and showing how the Student Outcomes of the P21 Framework were observed also in the teachers as professionals.

The Research as an Opportunity for Reflection

One of the main objectives of this study was to provide an opportunity for the participants to reflect upon their learning and teaching practices. In this sense, students shared their perspectives about how to improve the learning activities and how they valued their participation in the study.

> What I would do differently if I were the teacher is, I would have a vote for multiple stations we could do. Some station ideas I would have are short story on a persons' life, a compare and contrast on what's it like now and what was it like then, visual learn (videos and such), make a mini movie with small groups of people acting out a scene, said Liv M.

When asked if participating in the study was beneficial to them in any way, Neymar shared "I think that I could communicate better. This activity has improved my communication skills in my opinion." Jerome J. said, "being part of this study was very beneficial . . . I learned about my learning skills" and Ashley R. expressed, "I think it has beneficial because I can share my thoughts without being judged." Her answer not only

showed her opinion about her participation but contributed to the study's trustworthiness. In that same line of thought Elizabeth J. added, "Participating in this has been beneficial for me because I feel this has helped me get better at answering questions. I added everything that I felt and thought about the questions asked, and I really thought my answers through." Finally, Liv M. said, "I consider that participating in this study has been beneficial to me as a student in that I looked over my work to see what I liked in the unit and did not like in the unit. And I got to see if I did all of the work I wanted to do. Also, I got to reflect on if I did a good job on my work."

For the teachers, it was also intended to provide a space for reflection. On that regard, Lincoln commented,

> By participating in this study, I have been able to do more reflecting on my teaching and not only more, but in an intentional way. This has allowed me to plan on how to incorporate some of the truly positive aspects of the human rights work into future units. I was already a strong proponent of authentic assessment but the human rights study, especially the students' input affirmed this practice. I am currently doing a unit of study on neighborhoods and have been trying to incorporate some way for students to reach out to city council members or the mayor to express areas of concern they have. They also have the opportunity, if they want to, to take the action themselves. One of the areas that some students have noticed after researching neighborhood statistics is the percent of tree cover; students are debating on if a tree planting campaign would help beautify a neighborhood and then in turn improve some other aspects, like home values and violent crimes.
>
> This study also forced me to think about ways I incorporate technology in my lessons and particularly in my assessments. It is coincidental that I am now teaching the media class at my new school and have a set of computers that students work on every day.

Similarly, Jane said,

> I think the biggest benefit of the study was reinforcing my belief that teaching is not an isolated practice and works best when approached from a place of true professional curiosity. I treasure working with a colleague with a similar

> philosophical approach to my own, with the same non-negotiables and similar beliefs on what constitutes authentic assessment. Moreover, our common belief that school is a place where we have a moral imperative to teach for social justice and equity has stayed with me.

In conclusion, the process of reflecting helped the students discover a set of skills they were using but that were not evident or explicit to them. The students were able to reflect on their past learning experiences and identify relevant skills for their lives. On the side of the teachers, reflecting upon their practice helped them confirm their beliefs and expand their assessment practices while integrating technology for social change.

Limitations

The most significant limitation this study had was that observation of the learning environment was not possible. Not observing the teachers or the students during the implementation of the unit limited the extent in which I could apply my professional experience in the interpretation of their performances during class. The collection of data relied primarily on their answers during interviews and the online forums. This methodology was enough to gather the teachers' experiences, but it would be convenient to observe students because at their age, they do not have a comprehensive knowledge of their own skills. Another limitation was that students participated in the online forums between two and 16 weeks after the unit was implemented affecting their capacity to remember their learning experiences.

This study did not include an interview to the principal, and that was another limitation. The P21 Framework, which later constituted the main theoretical framework for the analysis of data, presents all components as interacting elements and that was evident in the data collected. For that reason, it would be advisable to include the

principal's perspectives as well as other actors that may influence the curriculum development at school.

Recommendations

For future research, observations of students are advisable to gather a more comprehensive set of data and for the researcher to contribute as an observer-participant. Students' responses would be enriched by observing how students engage in class, participate, and demonstrate the development of 21st-century competencies in their daily school environment. An interview with the principal would also contribute to identify other elements that influence the implementation of the curriculum for the development of 21st-century competencies, especially regarding the elements described as support systems. This interview should include questions about professional development practices and how the school supports professional learning communities.

Implications

The original conceptual framework designed for this study considered only the competencies of the P21 Framework related to learning and innovation and those related to information, media and technology. The results of this study suggest that the development of 21st-century competencies is an effort in which support systems play an important role to make possible students' outcomes. On the other hand, the results point toward the interrelation among the competencies, meaning that 21st-century competencies should be promoted in an integrated manner. For that reason, it would seem more appropriate to use a conceptual framework for the development of 21st-century competencies for social change which includes a wider range of 21st-century

competencies. Based on the results of this study, a revised version of the conceptual framework is presented in Figure 23. In this diagram, critical literacy is used in conjunction with 21st-century competencies in general to develop a curriculum that invites students to act and contribute to the transformation of their realities which is the goal of critical pedagogy and critical democracy endeavors.

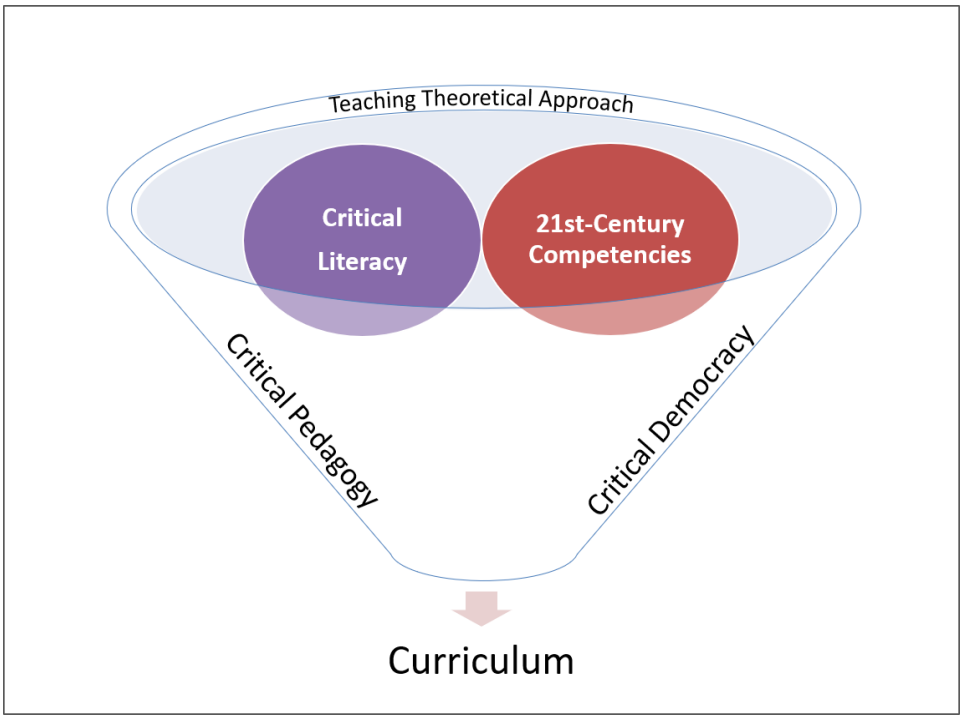


Figure 23. New Conceptual Framework.

The results of this study also suggest that the development of 21st-century competencies through critical literacy experiences for social change purposes are possible from a teaching theoretical approach of critical pedagogy and critical democracy. However, when considering the Partnership for 21st Century Skills' Framework (P21 Framework) as the foundation for the development of 21st-century competencies for social change, then a perspective of human rights needs to be added to that framework to make possible such learning experiences as graphically shown in Figure 24. At the

moment, the P21 Framework includes a description of the 21st-century competencies from an international and global perspective but doesn't make a reference to international and globally accepted human rights as those proclaimed by the United Nations. The need of a perspective of human rights is crucial when building and education for peace, social transformation, social justice, and equality (Pascual Morán, 2014; Yudkin Suliveres, 2014). The P21 Framework could include to the 21st Century Interdisciplinary Themes of Global Awareness and Civic Literacy a perspective of human rights. That way, the development of 21st-century competencies in our students would be framed by the ultimate goal of achieving equity in our world.

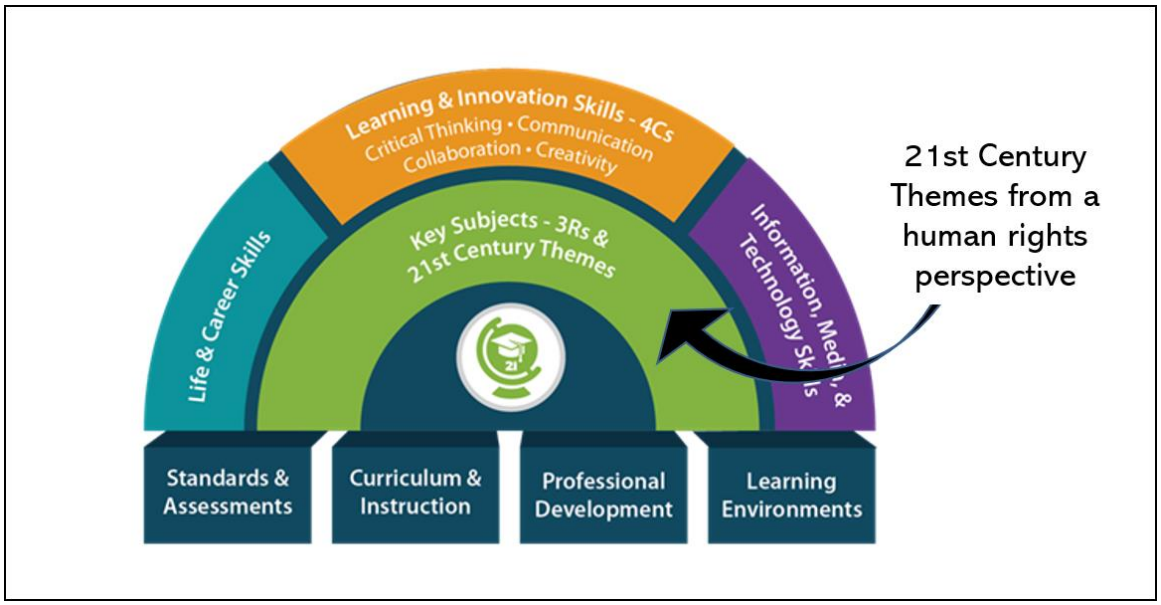


Figure 24. P21 Framework with a human rights perspective.

Conclusion

In this chapter, the interpretation of findings was discussed based on the literature reviewed in Chapter 2. This chapter included a discussion about how the experiences of the two middle-school teachers and their students reflected a wide variety of 21st-century

competencies as the ones described by the Partnership for 21st-Century Learning. It was also discussed how those competencies were developed in an integrated manner instead as isolated pieces. Limitations of the study were presented as well as recommendations for the field. Implications such as how to improve conceptual frameworks to study the development of 21st-century competencies at school and how to foster 21st-century competencies for social change were also discussed.

The results of this study contribute to the growing knowledge about how teachers and students may use critical literacy and ICT to promote 21st-century competencies for social change. Very little research has been done regarding how ICT can be integrated into the middle-school language arts or social studies classrooms to promote 21st-century competencies and social change, and even less research has been done including the perspectives of students. In a world in which, on the one hand, technologies emerge and evolve continuously while on the other, environmental, ethical, and political problems threaten the security of millions of human beings, education must provide the students the necessary tools to be critical citizens capable of transforming injustice and inequality. The competency-based approach seems to be a suitable start point. However, a human rights perspective seems to be essential to make those educational efforts truly transformational.

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Appendix A: Invitation Text to Potential Teacher Participants

Dear Mr./Ms. _____,

I am a doctoral candidate at Walden University Ph.D. program. As part of my dissertation, I will be researching the implementation of critical literacy and information and communication technology for the development of 21st-century competencies and critical democracy. I'm seeking critical literacy teachers interested in participating in this research. The research will include daily observations during class time, interviews with you as a teacher, and online discussion forums with your students.

Please, let me know if you would like to participate. You can contact me by phone or e-mail if you have any questions.

Thanks for your time,

Joan Figueroa-Rivera
Ph.D. Candidate
Specialization: Learning, Instruction, & Innovation
Walden University

Appendix B: Invitation to Potential Student Paticipants' Parents or Legal Guardians

Dear Sixth-Grade Parent,

I am a doctoral candidate at Walden University Ph.D. program. As part of my dissertation, I will be researching how middle school students can develop literacy and 21st-century skills while integrating digital technology for social change. Your child's school is an excellent place to conduct this study. For that reason, your school's principal and the district's research office have granted permission to conduct the study at your child's school. This research will be beneficial for teachers and students because it will bring us information about how middle school students perceive their learning experiences regarding literacy and digital technology.

The research will include daily observations during class time, analysis of artifacts (mainly students' class work), interviews with the teachers, and online discussion forums with the students using pseudonyms (fake names). All students' information will be kept confidential, and results will be shared using pseudonyms (fake names) to protect the students' and teachers' identities. Your child may participate only with your authorization. For your child to become a participant, it will be necessary that you sign an Informed Consent Form. An orientation will be provided on June 20, 2018, at 4:00 p.m., at the media center of your child's school to answer any questions.

If you are interested in participating and signing a consent form, you can contact me directly by phone, texting or e-mail.

I am also available for you if you have any further questions.

Thanks for your time,

Joan Figueroa-Rivera
Ph.D. Candidate
Specialization: Learning, Instruction, & Innovation
Walden University

Appendix C: Guide to Analyze Artifacts

Purpose: To identify and describe how students show to be developing 21st-century competencies (21) and experiencing critical democracy (DM) in this case due the critical literacy activities (CL) and use of information and communication technology (ICT).

Artifact File ID #	Artifact (students' class work or products, teaching materials, others)	Researcher's comments	In Nvivo
a.Taxonomy-Ashley	Graphic organizer: Taxonomy of Human Rights	creativity	Y
a.Taxonomy-Elizabeth	Graphic organizer: Taxonomy of Human Rights	critical thinking	Y
a.Taxonomy-Gracelyn	Graphic organizer: Taxonomy of Human Rights	global aware.	Y
a.Taxonomy-Jerome	Graphic organizer: Taxonomy of Human Rights		Y
a.Taxonomy-Jocelyn	Graphic organizer: Taxonomy of Human Rights		Y
a.Taxonomy-Lia	Graphic organizer: Taxonomy of Human Rights		Y
a.Taxonomy-LivMoore	Graphic organizer: Taxonomy of Human Rights		Y
a.Taxonomy-Neymar	Graphic organizer: Taxonomy of Human Rights		Y
a.Taxonomy-Ronaldo	Graphic organizer: Taxonomy of Human Rights		Y
a.Taxonomy-Saoirse	Graphic organizer: Taxonomy of Human Rights		Y
b.Organizations.Rsch-Gracelyn	Graphic organizer: Civil Rights Movement-Related Organizations	critical thinking	Y
b.Organizations.Rsch-Lia	Graphic organizer: Civil Rights Movement-Related Organizations		Y
c.SummaryMarch1-Elizabeth	Summary of *March: Book One* Graphic Organizer	creativity	Y
d.Event-HumanR.March3-Ashley	Human Rights in *March: Book Three* Graphic Org.	communica-tion	Y
d.Event-HumanR.March3-Jerome	Human Rights in *March: Book Three* Graphic Org.	creativity	Y
d.Event-HumanR.March3-Jocelyn	Human Rights in *March: Book Three* Graphic Org.		Y
d.Event-HumanR.March3-Lia	Human Rights in *March: Book Three* Graphic Org.		Y
d.Event-HumanR.March3-Ronaldo	Human Rights in *March: Book Three* Graphic Org.		Y
e.GraphicOrg.March3Events-Jocelyn	Human Rights in *March: Book Three* Graphic Org.		Y
e.GraphicOrg.March3Events-Saoirse	Human Rights in *March: Book Three* Graphic Org.		Y
f.InternetRsch-Elizabeth	Graphic *Organizer* for Internet Research	ICT use	Y
f.InternetRsch-Gracelyn	Graphic Organizer for Internet Research	info. skills	Y

f.InternetRsch-Jocelyn	Graphic Organizer for Internet Research	global aware.	Y
f.InternetRsch-Saoirse	Graphic Organizer for Internet Research		Y
g.HumanR.Issues-Jocelyn	Human Rights Issues Graphic Organizer	ICT use	Y
g.HumanR.Issues-Lia	Human Rights Issues Graphic Organizer	info.skills	Y
g.HumanR.Issues-LivMoore	Human Rights Issues Graphic Organizer	critical think.	Y
g.HumanR.Issues-Neymar	Human Rights Issues Graphic Organizer	global aware.	Y
g.HumanR.Issues-Saoirse	Human Rights Issues Graphic Organizer		Y
h.GraphicNovel-Neymar1	Graphic Novel	creativity	Y
i.Aylin.DACA.Rsch.01	Graphic Organizer for Internet Research		Y
i.GraphicNovel-DACA1-Aylin	Graphic Novel	creativity	Y
PP-Ashley	Graphic Novel	global aware.	Y
PP-CristianoRonaldo	Graphic Novel		Y
PP-Elizabeth	Graphic Novel		Y
PP-Jocelyn	Graphic Novel		Y
PP-Lia	Graphic Novel		Y
PP-LivMoore	Graphic Novel		Y
3. *March Book 3*_ Defenders of Justice	Language Teacher Unit		
3. Teachers Unit	Social Studies Teacher Unit		

Appendix D: Teachers' Semi-Structured Interview Guide 1

Purposes

1. Discover what are the teachers' reflections about their critical literacy practices using information and communication technologies for critical democracy or social action (RQ2).

Introduction

1. Purpose of the study. Review data collection procedures (interviews, students' online discussion forum, artifacts).
2. Purpose of the interview (not an evaluation, just a description of experiences).
3. Topic of the interview (critical literacy as a topic related to my professional interests and background)
4. Privacy issues (name will be kept confidential, files on password protected computer)
5. Recording (ask first, confirm consent, explain benefits of recording for accuracy)
6. Choice of stopping the interview at any time or skipping a question(s)
7. Clarification of any detail or answer any possible participant's question(s)

About Critical Literacy

1. How many years have you been a literacy or social studies teacher?
2. Which grades have you taught?
3. How would you describe your main pedagogical beliefs as a social studies teacher? (Summarize and confirm the interpretation of answers).
4. Tell me about some examples of activities or projects that you have done with your students, if any, in which the literacy experience in the classroom has been connected to the social context of students?
    - Which have been the most important achievements/strengths?
    - Which have been the challenges?
5. In general, which are your next goals as a literacy/social studies teacher? What you would like to help your students achieve as a literacy/social studies teacher? (Summarize and confirm the interpretation of answers).
6. Going now to the unit of study that you just developed with your 6th-grade students about human rights, what were the objectives, activities, or projects of that unit of study? From the beginning to the end, tell me all that happened.
    - Which of those goals have been achieved?
    - Which have been the challenges?
7. Which have been your learnings as a teacher during this unit?
8. Which will be your next steps regarding the challenges of this unit? (Summary and confirm the interpretation of answers).

Closing

9. Is there anything else that you would like to add, any other experience or something that comes to your mind when talking about the topics of this interview?
10. Ask if she/he could review the analysis of this interview to double check the researcher's interpretations.
11. Thank for the time invested.

Note: Questions based on Baser, D., Kopcha, T. J., & Ozden, M. Y. (2016). Developing a technological pedagogical content knowledge (TPACK) assessment for preservice teachers learning to teach English as a foreign language. *Computer Assisted Language Learning*, *29*(4), 749–764. https://doi.org/10.1080/09588221.2015.1047456 and Shamir-Inbal, T., & Blau, I. (2016). Developing digital wisdom by students and teachers. *Journal of Educational Computing Research*, *54*(7), 967–996. https://doi.org/10.1177/0735633116649375

Appendix E: Teachers' Semi-Structured Interview Guide 2

Purpose

1. Discover what are the teachers' reflections about their critical literacy practices using information and communication technologies (ICT) to develop students' 21st-century competencies and critical democracy (RQ2).

Introduction

1. Purpose of the interview
2. Topics of the interview (critical literacy, the use of information and communication technology, students' 21st-century competencies, and critical democracy or social justice as topics related to my professional interests and background)
3. Privacy issues (name will be kept confidential)
4. Recording (ask first, confirm consent, explain benefits of recording for accuracy purposes)
5. Choice of stopping the interview at any time or skipping a question(s)
6. Clarification of any detail or answer any possible participant's question(s)

About Using Information and Communication Technology

1. Now we will move to the second topic I want to share with you which is the use of digital technology. For what purposes do you personally use information and communication technology like web browsers, email, Skype?
    - Social networks like Facebook, Twitter, or Instagram?
    - YouTube?
2. Now we will be focused on the use of information and communication technology (ICT) in your classroom. When we refer to ICT, we refer to digital resources that allow to store, retrieve, and share information through telecommunication systems like computers, cell phones or email. In which ways you integrate any of these technologies to your literacy/social studies teaching practice? What has been your experience?
    - What have been your main achievements?
    - What have been your main challenges?
    - How do information and communication technology help your students collaborate with if each other?
3. Institutional factors such as policies, school management style, or school culture in general (how things are done at school) affect what happens in the classroom. What institutional factors affect the integration of technology to your literacy practice? It could be positively or negatively, or both.
4. What physical or technological provisions at your school support or hinder your integration of technology (like availability of technology or Wi-Fi)?
5. During the implementation of this unit, which have been your most important achievements regarding the integration of ICT?

6. Which have been your main challenges?
7. How does integrating ICT helped or prevented the achievement of your goals with this unit?
8. How do you think that using information and communication technology contributes or not to collaboration among students in your classroom?
9. In your opinion, how does using information and communication technology affect student engagement in literacy and their motivation for learning?
   (Summary and confirm interpretation of answers).

About Students' 21st-Century Competencies

10. The last topic I would like to ask you about is the development of students' 21st-century competencies. Some of the 21st-century competencies that have been described are critical thinking, creativity, communication and collaboration, information and communication technology use, and problem-solving (Greenstein, 2012). (Providing a sheet to the interviewee with the mentioned competencies written), in which ways do you think that the literacy curriculum in your classroom helps students develop any of these competencies?
11. How do you think that using information and communication technology could help your students develop any of these 21st-century competencies?
    (Summary and confirm interpretation of answers).

About Critical Democracy

12. Finally, regarding the implementation of critical literacy activities for social action, social justice, or critical democracy, which have been your students' main accomplishments during this unit?
13. What would you like to achieve that was not possible? How would you overcome that barrier in the future?

Closing

14. Is there anything else that you would like to add, any other experience or something that comes to your mind when talking about the topics of this interview?
15. In which way do you consider that participating in this study has been beneficial to you as a teacher or could be beneficial for your practice in the future?
16. Ask if she/he could review the analysis of this interview to double check the researcher's interpretations.
17. Review next steps such as member checking, students' member checking, sharing of results with all participants in an age-appropriate manner.
18. Thanks for the time invested.

Appendix F: 21st-Century Competencies Diagram

Twenty-first-century competencies comprise knowledge, skills, and dispositions for

Based on Greenstein, L. (2012). *Assessing 21st-century skills: A guide to evaluating mastery and authentic learning*. Thousand Oaks, CA: Corwin.

Appendix G: Interviews Transcriptions

Purpose: To keep record of interviews audio recording transcriptions.

Date	Interview	Audio File ID #	Trans-cribed (Y/N)	Uploaded into Nvivo (Y/N)
6/13/18	Lincoln – Interview 1 – Guide 1	18061304	Y	Y
6/19/18	Jane – Interview 1 – Guide 1	18061901	Y	Y
6/19/18	Jane – Interview 2a – Guide 2	18061902	Y	Y
6/19/18	Lincoln – Interview 2 – Guide 2	18061903	Y	Y
7/4/18	Jane – Interview 2b – Guide 2	3rd_Lang-Complete	Y	Y
7/4/18	Jane – Interview 2c – Guide 2	4th_Lang-Complete	Y	Y

Appendix H: Online Discussion Forums Guide

Purposes

1. Discover the students' reflections about their literacy learning experiences using information and communication technologies (ICT) to develop knowledge, 21st-century competencies, and critical democracy (RQ3).
2. Provide a closing and exit from the study.

Introduction

1. Welcome to the Online Discussion Forum! The purpose of the online discussion forum is to know your point of view regarding your learning experiences during the past unit of study, No one will judge your answers, so feel free to share your thoughts openly. Remember this discussion is not for grading.
2. Essential agreements
    a. Everybody is invited to participate.
    b. We will value everybody's opinion and show respect and appreciation for others' ideas.
    c. Privacy issues: Remember your name will be kept confidential, all files are will be kept on a password-protected computer, and neither parents nor teachers will know about your responses.
    d. You have the choice to stop participating in the discussion forum at any time or skip any question(s) you do not want to answer.

Online Discussion Forum 1: Critical Literacy / Critical Democracy

1. Since you returned from Spring Break, you have been studying . . . (mention the unit's title or topic). During that unit, you did several literacy activities, reading and writing activities.
    a. Name which literacy activities do you recall from this past unit.
    b. What skills did you improve as a reader and writer doing those activities?
    c. What do you think about the topic of this unit? Was it interesting, relevant, or important to you? Why?
    d. How does this unit motivate you to be an agent of change?
    e. What other things did you learn during this unit that are meaningful to you?
2. Remember you can answer as many questions as you want. Also, you are invited to respond to your classmates by commenting if you agree with them or not.

Online Discussion Forum 2: About Information and Communication Technology

1. Information and communication technology includes all digital systems that help us store, retrieve, and share information; things like email, Internet, computers, cell phones. It's any technology that helps us communicate with others digitally.

a. How did the technology help you learn during this unit?
b. What do you like and what you do not like about using ICT for learning?
c. Which of the activities would you improve and how?
d. What would you do differently if you were the teacher?

Online Discussion Forum 3: 21st-Century Competencies

1. (Show the 21st-Century Competencies Diagram in Appendix F). Look at the following illustration. This illustration shows the skills or competencies that some companies consider important in the 21st-century.
    a. Which of those skills do you consider important in your development as a student and a future professional?
    b. How do you think that the last unit of study helped you develop any of those skills?
    c. What skills do you think you improved by using information and communication technology?
    d. Which of those skills would you like to improve or learn more about in the future?

Online Discussion Forum 4: Closing

1. Is there anything else that you would like to add, any other experience or something that comes to your mind when talking about the topics of these online forums?
2. In which way do you consider that participating in this study has been beneficial to you as a student or could be beneficial for you in the future?

Thanks for participating in this discussion forum! The researcher may be in contact with you in case she needs to confirm with you her interpretations about your answers. After she finishes analyzing and interpreting all the information gathered, she will share the results with all student participants.

Thanks again for all the time you invested in this study. It is much appreciated!