

Nurturing Empathy through Critical Media Literacy and Design Thinking: Partnering
Pedagogy to Build Community

Melissa McKinney-Lepp, BA, BEd

Department of Graduate and Undergraduate
Studies in Education

Submitted in partial fulfillment
of the requirement for the degree of

Master of Education

Faculty of Education, Brock University
St. Catharines, Ontario

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Abstract

What counts in critical literacy education today and for learners' futures? The neoliberal agenda in Canada prioritizes standardization, efficiency, and results-based performance. The social isolation and unrest of the global pandemic are reflected in media headlines and images. This thesis considers narrow views of success in light of critical educational practices that nurture competencies such as critical empathy, collaboration, and communication. This arts-informed multimodal research contemplates how educators can begin addressing what pedagogies work and are important for learners right now.

This action research and thesis is framed by design thinking (Ask, Imagine, Design, Build, Evaluate, Refine and Share). Research examined experiences created in a primary classroom where pedagogies were designed to nurture critical empathy (CE) by utilizing design thinking (DT) and critical media literacy (CML). Students worked for a six-month period on an inquiry into family cultures and traditions, which included photographing an important family object, editing, and manipulating these photos (their own and their peers') and sharing them with audiences. The photographic processes and pedagogies build on Wendy Ewald's *Literacy through Photography* work.

Data included photographs, journaling, and audio and video recordings were analyzed using my adaptation of Suchar's (1997) framework. Findings indicated that CE could be nurtured through intentional experiences utilizing DT and CML, reaching both participants and a wider audience who interacted with student work. Specifically, CE was nurtured when students worked towards common goals through opportunities that built upon collaboration, communication, and problem solving over time. CE was nurtured when

students had opportunities to become experts, take risks, practice being leaders, and make decisions in a safe and supportive environment. Lastly, CE was nurtured when students had opportunities to build relationships with their peers and consider multiple points of view. Limitations included separating teacher-learner from teacher-researcher roles, and restrictions put into place due to the global pandemic.

This research examines and illustrates an alternative to performance-based “best practice” teaching. Utilizing critical literacy, multimodal, photographic pedagogies employed through design thinking, an environment was created where each student could be successful, and competencies were valued over standardized results.

Acknowledgment of Participants

Student participants, with parental/guardian consent, made this research both possible and successful. Students' willingness to be flexible, try new things, and share their lives through their photographs allowed me to consider my questions as both a teacher-learner and teach-researcher. I appreciate and value their commitment to this project, to each other, and to me. My students have, and continue to be, my inspiration and the source of my greatest learning. To the class of 2020/21, I thank you.

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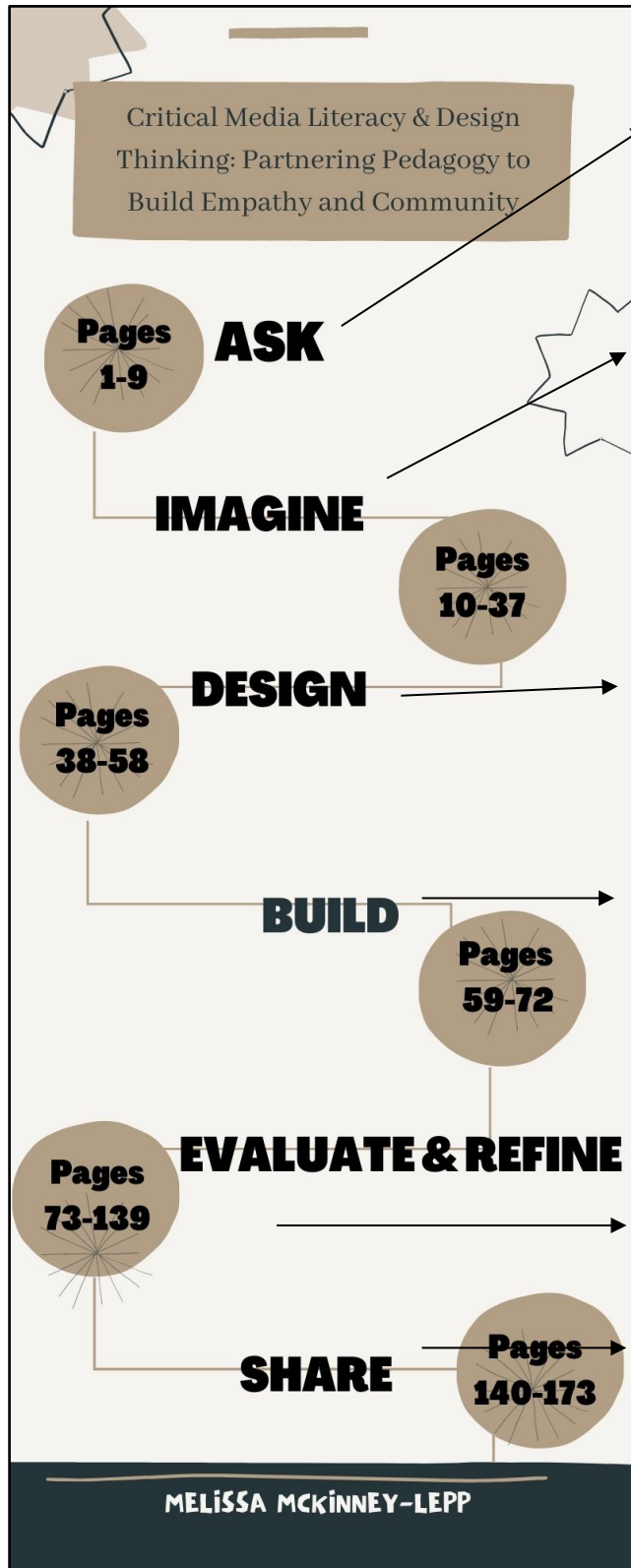
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DESIGN OVERVIEW



- What is the Problem?
- Personal Story & Rationale
- What Would I Like to Accomplish?

- What Are Some Solutions?
- What Have Others Done?
- Review Related Literature:
Critical Empathy, Design Thinking, & Critical Media Literacy

- Designing the Teacher-Learner (Instruction, Learning Environment, & Context | Considering Community, School & Classroom)
- Designing the Teacher-Researcher (Considering Ethics, Action, Arts-Informed, & Multimodal Research)

- Building a Plan for Data Collection (Photography, Screen Shots, Drawings, Journaling, Video, & Audio Recordings)
- Building a Plan for Analysis

- Presentation of Findings (My Codes: Collaboration, Communication, & Problem Solving | Student Agency, Risk Taking, & Leadership | Feelings, Point of View, & Relationships)

- Summary of Overall Themes | Working Towards a Common Goal | Building Experts Among Us | Understanding Us and Me
- Implications, Limitations, Future Research, & Concluding Thoughts

ASK

Can Empathy be Nurtured through Critical Media Literacy & Design Thinking?



Figure 1. Students asked each other about their cultures and traditions in my classroom.

During the ASK stage, designers consider the questions they have regarding a specific problem. Here, a designer's journey begins – but this is also where the designer returns with new questions that arise throughout their inquiry process. In this section, I will discuss the problem this thesis investigated, adding my own story into the conversation to help frame this action research project.

What is the Problem? Considering How and What to Teach

As I sat in my office considering how to frame the problem, my mind was overwhelmed by thoughts of social unrest from the past few years. Even though I had been isolated in my office for many of those pandemic months due to mandated lockdowns, the news still found me. Remembering the headlines and issues that made their way into my head space was not difficult, and created feelings of anxiety, stress, and overall unrest. COVID-19, Black Lives Matter, global warming, residential schools: the world had caught fire, and it seemed that none of us were prepared to put it out. Even if we wanted to, how could we have? We could not link arms, hold hands, or stand together – unless at a minimum of six feet apart.

Throughout it all, I continued to be an elementary school teacher, a career that has certainly evoked many questions for me over the years regarding what curriculum should be taught – and how. I must admit, with

the flames all around, it was harder to see the purpose behind a lot of traditional teaching: those direct lessons with a focus on content knowledge rather than issues that impact students, allowing for critical thought. What I did see, however, was the extreme need to help my students recognize, analyze, and deal with the flames – whatever they might look like – for the 25 bodies in front of me.

Responsive teaching,¹ instruction that is connected to social justice issues of importance to my students, is not new to me. For years, I have helped students investigate their questions, consider multiple solutions, and share their results with the community. Throughout this work, my own questions rose to the surface, specifically around competencies² such as collaboration, communication, and empathy. I saw how these competencies were interwoven and were necessary to the success of each student's project. I also observed that some learning experiences provided greater opportunities to practise these competencies than others.

Of even more importance, however, the past few years have shown me that these competencies are what's needed in the classroom –

¹ Responsive teaching involves the "moment-to-moment" decisions that teachers make as they observe and analyze student behaviour, conversations, and products (Fountas & Pinnell, 2022).

² Competencies involve the ability to meet complex demands within a specific context. Numerous elements (cognitive, functional, interpersonal) are involved: i.e., technical, attitudes, knowledge, skills (OECD, 2003, CEDEFOP, 2014).

and in the world. How can problems be solved if people cannot communicate or work with one another? How can people find the capacity to listen if they do not feel empathy, or if they lack the desire to even consider another point of view? According to Konrath et al. (2011), college students in America are 40% less empathetic than they were three decades ago; a 2019 report from the Canadian Broadcasting Corporation (CBC), entitled, *Empathy makes us human, but research suggests it may be on the decline*, also reflects Konrath et al.'s findings. In 2016, the Ontario Ministry of Education (OME) released a foundational document for discussion entitled, *21st Century Competencies*, specifically addressing the immanent need for “deliberate changes in curriculum design and pedagogical practice” in order to “emphasize and develop these competencies (i.e., empathy, collaboration) in explicit and intentional ways” (p. 3). The current global pandemic has further highlighted the need for educators to ask difficult questions about the way we treat one another and work together towards solutions. As a society, we must sift through the layers of information bombarding us daily, such as recent headlines reporting racism and hate-crimes (discussed in IMAGINE) and begin to see ourselves as citizens of both our local and global communities. The OME document (2016) also claims

school should prepare students to be active, informed citizens. Now is the time to begin this work in elementary classrooms!

What I Sought to Accomplish

As mentioned above, I knew from previous work that certain learning experiences (i.e., STEAM, inquiry) had the potential to nurture the development of competencies. Such competencies have been the by-product of my pedagogical approach, but not my immediate or long-term focus. I began wondering if I was approaching my practice backwards. What if my focus shifted to look *directly* at how to develop these competencies (i.e., empathy, collaboration) within my classroom learning environment? How might I adjust my pedagogies to do so?

Competency: Critical Empathy

Considering my experiences as an educator, recent headlines, and the global pandemic, critical empathy (CE) urgently called for further research and focus. CE's decline and the current social and learning conditions make this study's focus both relevant and timely. *Empathy* includes the ability to consider another point of view, while *critical empathy* requires social responsiveness to others through actions (Mirra, 2018). These are not separate constructs, but they are different. To speak up for someone, you are demonstrating your ability to empathize, but also your ability to do something to make a situation better. Throughout this

project, I focused on the importance of nurturing both, as they are interwoven. Without opportunities to learn about others and empathize with them, there is little hope of social action. The competency of empathy will be further explored in the IMAGINE section.

Pedagogies: Design Thinking and Critical Media Literacy

When considering pedagogies to structure the learning environment, I was drawn to both design thinking and critical media literacy. In response to our swiftly changing world, design thinking and critical media literacy pedagogies allow students to examine and act upon difficult issues of social justice. I will briefly describe them here, with a deeper analysis provided in the chapter IMAGINE.

Design thinking (DT) allows for the intentional integration of core subjects (i.e., language, social studies, math) into a learning environment that is designed to solve real-world problems through creating both products (i.e., website, podcast) and ideas (i.e., greater understanding of point of view) (Carroll, 2014; Watson, 2015). This process provides opportunities for students to construct their own understanding of curriculum expectations through hands-on experiences and real-world problems. In addition, an environment that focuses on and supports the processes of creating encourages skills such as empathy, collaboration,

creativity, and critical thinking (Coleman, 2016; Gross & Gross, 2016; Watson, 2015).

Kellner and Share (2019) states that “[c]ritical media literacy provides a theoretical framework and transformative pedagogy to empower students to question media, challenge dominant ideologies, and participate in society as critical and active media users and creators” (p. 107). *Critical media literacy* (CML) provides access to issues of social justice, allowing students opportunities to question and contribute to powerful conversations and ideas that relate to their everyday lives. These experiences can encourage communication, perspective taking, and empathy. By examining and creating media such as photography, students can begin to make critical observations and inferences about situations that are both similar to and different from their own.

By partnering DT and CML, I wondered how CE might be nurtured. By combining these pedagogies and designing a framework for both instruction and research, I wondered what other competencies would emerge as being necessary, and how lessons could be structured to both promote and encourage the growth and development of CE. I wondered how to design an inquiry utilizing these pedagogies to allow for the creation and analysis of media through a thoughtful and intentional process, with the ultimate aim of both developing and sharing a new

understanding with others. I then began wondering how CE could be nurtured within my class community by partnering DT and CML.

There is, unfortunately, little research on the partnering of these two pedagogies. Together, I wondered if they could provide a powerful catalyst for nurturing CE in an authentic and collaborative context. Morrell (2008) summarizes Adorno's views about civic action and education:

Frankfurt School theorist Theodor Adorno wrote of two truths in his 1966 essay, "Education After Auschwitz". These truths acknowledge that: (1) the education that children receive can increase hatred in the world, and (2) a critical and reflexive education can help increase the authentic dialogue, intercultural understanding, and civic action that may help significantly reduce acts of hatred and intolerance in our increasingly heterogenous and interconnected society. (p. 43)

So, to end this section: what did I set out to accomplish? I wanted to find a way to provide my students with the second type of education Adorno speaks of above – an education that engages in real conversations about social justice issues, that increases awareness and action as opposed to hatred and seclusion. The global pandemic has meant months of social isolation, and time spent away from those outside of our immediate homogeneous circles. By intentionally crafting

experiences rooted in DT and CML, I wanted students to begin building their understanding not only of themselves, but of their peers and community again. I wanted each opportunity to help grow our ability to see each other for who we are – similarities *and* differences. But mostly, I wanted my students to see that in a world on fire, we must have the courage to help one another, to find shelter, and cool the flames.

IMAGINE

The Potential: Critical Empathy through Design Thinking & Critical Media Literacy



Figure 2. Students experimented with photography in my classroom while building criteria for what makes an object look important.

In the IMAGINE stage, designers explore the problem more deeply by looking to see what others have done and then, by applying this new information, a hypothesis is created, or an idea that may work as a solution. As a teacher-researcher, it is at this stage that I considered research related to critical empathy (CE) and began to consider and investigate how design thinking (DT) and critical media literacy (CML) could complement one another to create an environment that nurtured the growth and development of CE.

Critical Empathy

In exploring the concept of CE within this action research project, the complexity of empathy as a concept must be understood in order to determine why critical empathy is needed, and then identify how it fits within the context of education.

Understanding the Complexity of Empathy

Although the word *empathy* did not originate until 1909, the concept can be found within and across numerous disciplines, including literature, politics, and the arts, throughout time (Baldwin, 1963; Demetriou, 2018; Titchener, 1909). In 400 BC, Euripides spoke about experiencing the lives of neglected communities: “[w]hen a good man is hurt all who would be called good must suffer with him” (Demetriou, 2018, p. 16). In the early 1900s, Gandhi spoke to the violence observed between Muslim and Hindu

citizens in stating, “[t]hree quarters of the miseries and misunderstanding in the world would finish if people were to put on the shoes of their adversaries and understood their point of view” (1924, p. 271). In a 2006 speech to graduate students, Barack Obama spoke of a general lack of empathy in American society and the need to change this, proclaiming, “I think we should talk more about our empathy deficit – the ability to put ourselves in someone’s shoes; to see the world through those that are different from us.” For centuries, then, leaders have defined empathy, but has anyone actually taught society how to empathize? More importantly, who is deemed worthy of receiving empathy, and what can be done to demonstrate empathy in our local and global communities? These questions help to provoke a deeper journey into the term *empathy* and the complexities of the construct.

In Nicole Mirra's (2018) book, *Educating for Empathy*, Mirra explores key concepts that help us to understand how we think about empathy. CE goes beyond simply understanding another’s point of view to acting and advocating *for* that point of view. CE is about social responsiveness, a collective understanding that action (in mind or body) must accompany empathy (Mirra, 2018). CE involves the relationship between cognition and action; that is to say, understanding another's point of view could

inspire action benefiting more than individual desire. Mirra's typology helps to further explain empathy (see Figure 3).

Mirra's horizontal axis refers to the concept of *humanization*, the idea that individuals cannot fully understand themselves until they understand each other, including those different from themselves. The vertical axis represents the sliding intent of human actions towards social change.

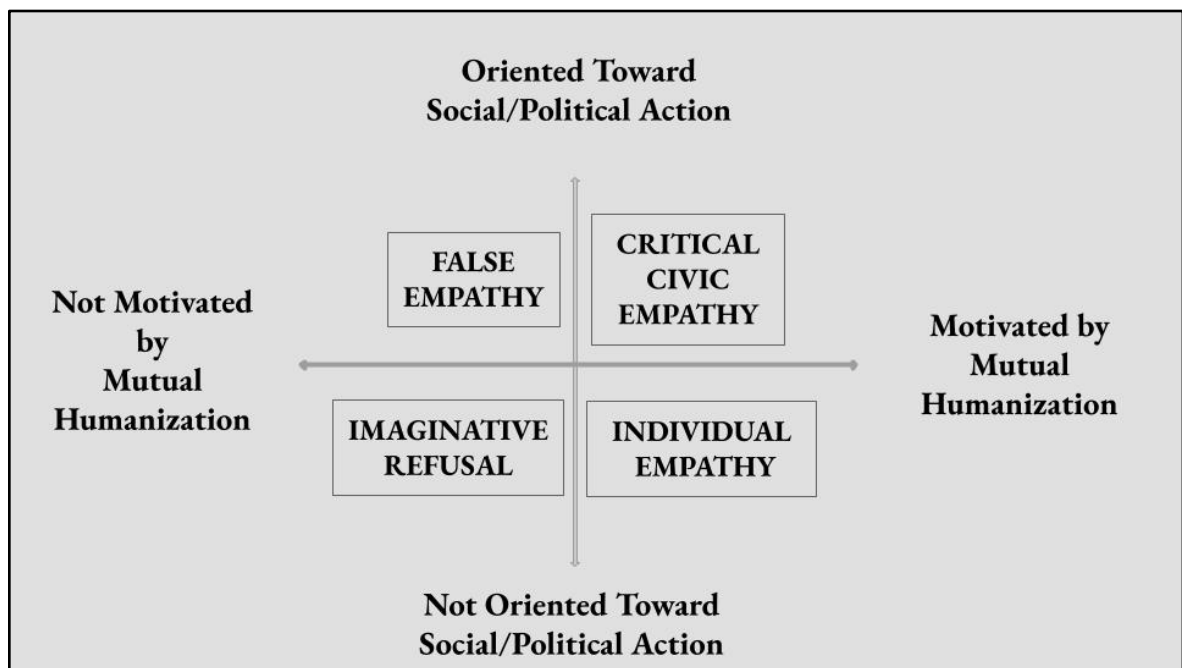


Figure 3. Typology of Empathy. This figure explains Mirra's classification of empathy (Mirra, 2008, p. 11).

- ◆ Mirra defines *imaginative refusal* as actions that are opposite to empathetic actions, or a refusal (perhaps unconsciously) to acknowledge others. These actions work against social justice and harmony and

deepen social divides as the individual has not considered another's point of view and, more importantly, has not shown the will to do so.

- ◆ *False empathy* describes the action of speaking up in public spaces where empathy is warranted, yet empathy is played like a card, only to be used for and with certain partners. This type of empathy excludes specific actions and entire groups of people who are deemed undeserving of said empathy.
- ◆ *Individual empathy* is what most educators teach, further explored below. Individual empathy is grounded in the idea of treating each other fairly, thinking before speaking, and considering how one would feel if something similar happened to them. This type of empathy teaching has become incredibly popular and can be seen throughout multiple curricula in Ontario that ask students to consider another's point of view. This type of empathy is the starting point for, and a building block to, form critical empathy.
- ◆ *Critical empathy* encompasses all that defines individual empathy and moves to social action. Critical empathy is the action that can follow the emotions and feelings that are developed during individual empathy and the knowledge that simply understanding someone else is not enough. Critical empathy is the understanding that empathy is a verb, an action word: propelling feelings into conscious decisions to make life better for someone else.

Mirra's work therefore illuminates the complexity of empathy, highlighting and intensifying its need and place in education at this moment.

Why is Critical Empathy Needed?

As noted in the ASK section, perhaps more than ever before, society needs to begin the work of understanding and advocating for all those who live within it. The current state of the world, specifically with the pandemic, has brought isolation to the forefront of lives, compounding feelings of loneliness as citizens abide by restrictions that limit social interactions. With less and less time spent in face-to-face conversations, people have fewer opportunities to practise reading the body language and emotions of others. Daily routines and interactions are replaced by solitary pursuits (Konrath, 2019; Roos et al., 2020; Zaki, 2019). Mirra's concept of humanization (2018) seems lost, even as society opens back up, due to rules and restrictions that are still in place and prevent closeness and contact, especially with those outside an individual's social circle.

Sara Konrath, a social psychologist, has spent years researching empathy, the importance of empathy within society, and the idea that it is declining. Konrath's study, conducted with O'Brien and Hsing (2011), utilized a cross-temporal meta-analysis method and is the most widely cited regarding empathy (e.g., Borba, 2020; Mirra, 2018; Schumann et al.,

2014; Zaki, 2019). Using the Davis Interpersonal Reactivity Index (IRI), Konrath and her colleagues studied American college students between the years of 1979 and 2009. The overall analysis indicated a sharp decline in empathic concern and perspective taking, especially in samples from after 2000 (Konrath et al., 2011). Although this study was conducted years ago, Konrath believes the conclusion – that society is becoming less and less empathetic – is still valid today: Konrath's latest research (2019), yet to be published, looks at the increasing pressure on children and young adults to succeed economically, and how this pressure increases thinking of oneself over one's community. Konrath believes in empathy's importance, despite its decline, for a socially just future.

Michelle Borba (2018), an educational psychologist, believes that empathy is what children need to be happy and successful, coining the term *empathy advantage* (p. 23). Like Konrath, Borba believes that the pressure on children to develop themselves for high-paying jobs is at an all-time high, and that empathy can both achieve this goal of economic success while also fighting against racism and prejudice. Throughout her research, she has found that empathy's importance is often underestimated, and she urges both parents and schools to start recognizing its place for the creation of a more civilized society (2016).

On June 8, 2021, BBC News reported the following headline: *Muslim family in Canada killed in 'premeditated' truck attack*. The article reported the deaths of four victims: a mother, a father, a grandmother, and a daughter. This crime was planned, and the family targeted simply because of their faith. As I sat, writing of this account, I couldn't help but cry. This horrific crime made me think of all the Muslim families at my school, the friendships, and relationships that I have with them, and, even more so, my intense fear of something like this happening to them. This news report made me wonder about the man charged. Had he not been given opportunities to learn about the Muslim faith? In a town like London, Ontario, with a multicultural community, how could that be true? In addition to what experts say (Borba, 2020; Konrath, 2019; Mirra, 2018; Zaki, 2019), this news report – and sadly, many others like this – confirm the need for CE now.

Critical Empathy and Education: Where's the Fit?

The primary goal of the province's educational system is to enable students to develop the knowledge, skills, and characteristics that will lead them to become personally successful, economically productive, and actively engaged citizens (OME, 2016, p. 3).

As mentioned in ASK, competencies such as empathy have been identified as having importance to student success in the 21st century. A

discussion paper released in 2016 by the OME states that these competencies are needed in a globally connected world with messy and complex problems. As new curricula are rewritten (e.g., Ontario Math curriculum in 2020), these competencies can be seen as additions to content. What's missing, however, is the knowledge around *how* to teach these competencies.

Perhaps the closest trend to teaching these competencies has been the popularity around incorporating social emotional learning (SEL) into educational programming, such as with the Roots of Empathy Program (2022) and Second Step (2022). SEL gained popularity in the 1990s with organizations such as Collaborative for Academic, Social, and Emotional Learning (CASEL) spearheading much of the research, producing frameworks focused on self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. CASEL assisted multiple schools across America with implementing SEL into school curricula and, in 2011, the United States Congress added SEL into its Elementary and Secondary School Act (Billiau, 2020). In Ontario, as mentioned, the most recent additional of SEL into curriculum was seen in the updated Math curriculum document (OME, 2020).

Unfortunately, many SEL lessons are focused on a specific competency, with detailed instructions on how to teach said

competency in isolation from other competencies and curriculum content. For example, on the CASEL website, it is claimed that students will be able to “put themselves in another’s shoes” after engaging in suggested empathy lessons, with instructions which include discussing the word *empathy* and numerous feelings (CASEL, 2017). These one-time lessons, separate from curriculum content, may have the potential to inspire individual empathy; however, they fall short from nurturing CE as social action is not considered or a core focus. Mirra (2018) believes that this separation of SEL from core subjects, rather than an integrated approach, minimizes the opportunity to illustrate the connection between empathy and current events. Additionally, it simply builds on individual empathy, as opposed to the potential to inspire actual social responsiveness (Davis, 1983; Mirra, 2018).

Providing students with opportunities to collaborate and communicate with one another is a better starting point towards CE than activities such as one-time SEL lessons (Borba, 2020; Konrath, 2018; Mirra, 2018; Zaki, 2019). Allowing students to work together on problems enables them to learn more about each other, while building their ability to communicate ideas and solutions. Additionally, using fictional texts can provide students with multiple examples of diversity within our global community, allowing teachers to engage in deeper conversations that

can build CE. The researchers cited above describe how working and learning with others different from oneself has the greatest potential to inspire future action and care. Mirra (2018) believes that until educators focus on these experiences – those which nurture CE and the importance of CE for social reform – moving beyond individual empathy to inspire social change would be difficult.

There is no neatly organized teacher resource that provides a sequence of activities that leads to emotional intelligence in all students. Each educator, utilizing their own understanding of SEL, is left to decide how, if, and when to focus on teaching competencies related to empathy (Crowley & Saide, 2016). I return to my wonderings in ASK. Could building a learning context with an intentional pedagogy of DT and CML lead to critical empathy? How could DT and CML provide regular opportunities to nurture the development of CE? Lastly, could these experiences, grounded in DT and CML, lead to social change and action?

Design Thinking

DT is not a new concept; in fact, it has been used in design and business for years. In 1969, Herbert Simon, an American psychologist and sociologist, first used the term in his book *The Sciences of the Artificial*, which represented an attempt to build a science of design that

incorporated technologies and brought together the social sciences and problem solving (Xinya & Hands, 2019). In 1987, Peter Rowe, the current Dean of the Harvard Graduate School of Design, wrote *Design Thinking*, which described the process of designing in architecture and urban planning (Xinya & Hands, 2019). The 1990s brought forth a surge of research and literature looking at DT in different disciplines (Carroll, 2014; Coleman, 2016; Davis & Littlejohn, 2017; Xinya & Hands, 2019). As the new century began, institutes such as IDEO and Hasso Plattner further explored the idea that non-traditional disciplines could not only access DT, but that DT could enhance and transform these disciplines to new and socially relevant levels. What was different within IDEO and Hasso Plattner's framing was the human-centred approach that was increasingly attached to DT: the designer engaging in empathetic thought regarding the stakeholders, who were attached to a specific problem, before beginning the design process (Carroll, 2014; Coleman, 2016). This human-centred approach could be used to solve problems beyond the business and design world, reaching multiple disciplines and issues of social justice (Coleman, 2016).

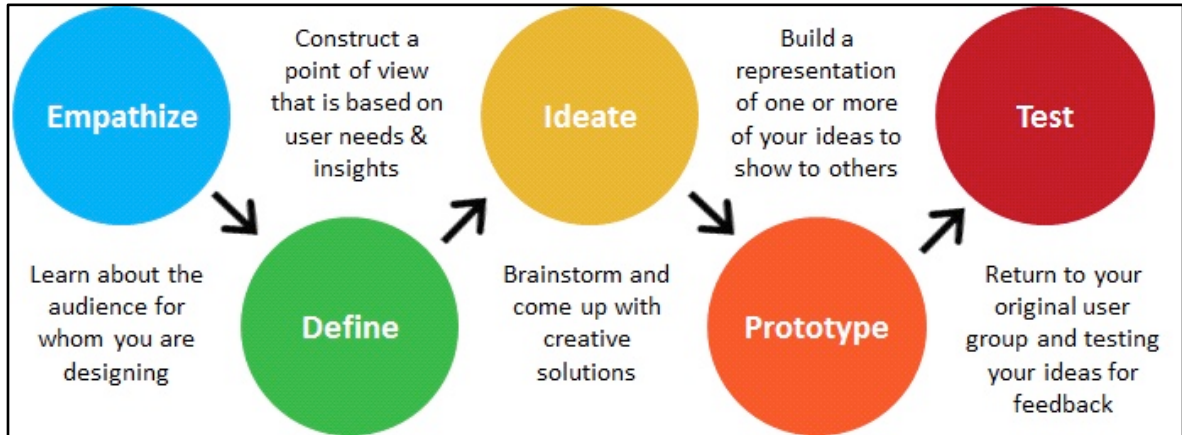


Figure 4. Design thinking process (Carroll, 2014, p. 16).

Figures 4 and 5 illustrate the emphasis on empathy in the process used by the Hasso Plattner Institute of Design at Stanford University, in addition to its evolution over a period of 13 years. Figure 4 (2007) illustrates a linear understanding of DT, as a designer moves from one circle to the next with reflection represented solely in the last phase. Figure 5 (2020) illustrates the design thinking process (DTP) with a deeper analysis of human perspective, as the original phases of *empathize* and *define* (see Figure 4) are expanded to *understand*, *observe*, and *point of view* (see Figure 5). Additionally, coloured lines are used in the later graphic (see Figure 5) to show the fluidity between stages, as opposed to the arrows in the earlier representation (see Figure 4), thereby implying a more linear process. This example illustrates the growth in thought regarding DT,

arriving at a place where empathy is central and stages work and flow together, thus allowing for movement between them (Carroll, 2014).

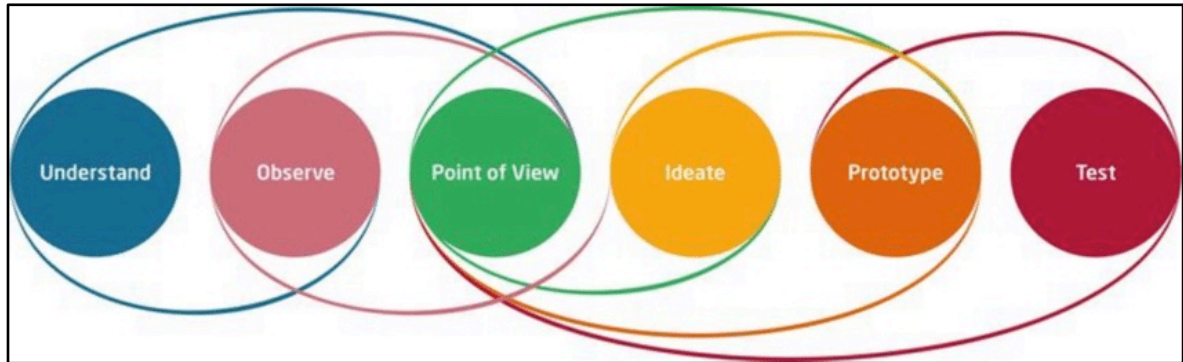


Figure 5. Design thinking process (Carroll, 2014, p. 16).

Design Thinking in Education

Grounded in Educational Theory: Connections to Constructivism and Social-Constructivism

Design-centred pedagogies are rooted in the works of progressive educational thinkers such as John Dewey and Lev Vygotsky. DT allows for student engagement through the construction of one's own knowledge, as opposed to that knowledge being acquired from one source: the educator. DT involves engaging with the world, active problem solving, and the idea that multiple solutions are possible (Dewey, 1916). DT is also deeply rooted in interactions and experiences. Collaboration with others, including both experts and peers, are essential for learning, reflecting, and growing (Vygotsky, 1986).

DT involves the scaffolding of cognitive abilities as the designer tries to make sense of a problem or experience (Gross & Gross, 2016). Moving among and between the stages of the DTP allows for this scaffolding within the approach's flexible structure. Students bring their own experiences into the classroom as they seek solutions to problems of relevance to their own lives and communities. They create knowledge not only through hands-on manipulation of materials, but also through observing, interacting, and receiving feedback from those around them. Collaboration is encouraged and fostered in these environments. According to Gross and Gross (2016), "teachers in constructivist classrooms structure situations so that learners become actively involved in content through manipulation of materials and social interaction" (p. 37). Design thinking promotes teaching which shifts the roles between not only student and teacher, but *also* materials and texts, creating a new way of learning (Baroutsis & Woods, 2019). The design thinking process mirrors these situations, allowing for student agency and opportunity to share work outside of the classroom walls.

Early Attempts to Implement Design Pedagogy

Dating back to the 1960s, designers worked with teachers and students to help them understand design, especially in areas related to the environment and environmental awareness. Projects often focused on

the design of buildings and the development of communities (Davis et al., 1997). In the 1970s, the British Government's Schools Council and the Department of Education and Science successfully proposed adding Design and Technology as a subject area into schools, while in North America, Industrial Arts classes could be found in a variety of K-12 schools during this same period. For example, in certain Ontario schools, Grades 7 and 8 students were bussed to local high schools to participate in Design and Technology classes. These classes provided some students with opportunities to solve problems and experience DT.

In the 1990s, the American National Endowment for the Arts (NEA) commissioned a 2-year study interested in exploring the impact of design-based pedagogy. The study looked at 10 years' worth of NEA funding and identified over 900 K-12 teachers who had been using design approaches in their classrooms. Although the results showed that students were more flexible and engaged learners, who were able to attempt difficult problems and find solutions through making, there was little evaluation of improved curriculum content knowledge or the effectiveness of these teaching practices themselves. Additionally, teachers admitted that their knowledge of DT was mostly self-taught through informal experiences and opportunities with like-minded professionals. The study raised more

questions than it provided answers about how this type of teaching could be implemented on a larger, national scale (Davis et al., 1997).

At the same time, the British School Examination and Assessment Council (SEAC) assessed national student achievement in design and technology, embodying a more rigorous research project focused on specific aspects of student performance. With specific attention to procedure, communication, and conceptual design, this study found that design approaches could be linked to student achievement and scores in specific subject areas. Like the American NEA study, no clear definition of the DT was recorded by the team. However, this lack of definition was intentional. Researchers stated that defining the process in any sort of linear or cyclical way would take away from the interactive and reflective process. They worried that by defining the process, educators would be too focused on doing all the steps rather than allowing the work to lead and truly engage in the experience (Kimbell et al., 1991).

The major differences between these studies include not only the position of design within the curriculum, but also the level of adoption by individual teachers (US) versus system wide change (UK). Without system adoption, DT in North America remained a process used by small groups of educators rather than the majority. Without clear and specific

curriculum connections, it is not surprising that few teachers engaged with design-based pedagogy (Davis et al., 1997; Kimbell et al., 1991).

Where is Design Thinking in Education Now?

In 2013, the OME released *Learning for All: A Guide to Effective Assessment and Instruction for All Students, K-12*. Within this guide, a very brief reference to DT can be found. Here, the Ministry suggests that educators could adopt DT as “a mindset” (p. 14) to approach challenges they face within their classrooms. Educators are encouraged to use the process in their planning, considering the diverse needs of their learners first. In addition, the document suggests that the process can be used to integrate technology and nurture “creativity, collaboration, empathy, and divergent thinking skills appropriate for twenty-first century learning and teaching” (OME, 2013, p. 14).

Despite being published nearly a decade ago, I know very few teachers who incorporate or are even aware of this pedagogy. Aside from a course that I co-taught on creating a makerspace in 2018, I do not know of any other workshop or professional development opportunity offered by my school board with DT as a focus. When searching for educational examples of DT within Ontario, I came across the Innovation Design and Implementation Team (IDIT), created by the OME. The IDIT website offers stories from a variety of educational settings from 2016-19;

however, it stopped operating some time in 2019. Both my own experiences and this example highlight the lack of messaging around DT and its importance within our education system.

Although DT is not mentioned within the Ontario Arts Curriculum (OME, 2009), it bears similarities to the creative process outlined in detail within the front matter of this document. The creative process, like DT, is intended to assist students through a design process with flexible stages such as imagining, planning, exploring, and reflecting (OME, 2009).

Although the creative process has similarities to DT and, broadly, inquiry-based learning, it is not explicitly linked to DT or other existing curricula.

My Journey with Design Thinking




My own understanding of DT aligns with Brown's (2008) definition: a rich and human-centered approach to problem solving, with empathy at its core and a pedagogy that embraces collaboration, experimentation, communication, and multiple other 21st century competencies. Figure 6 illustrates how I used DT with my Grade 4 class in 2019. At that time, I was extremely interested in combining DT with STEAM; you will see I have noted the connections throughout the graphic. At the time, I used the model created by Hasso Plattner (see Figure 4), as I had yet to come across the version I currently use.

As a teacher, DT provided my STEAM environment with a thinking structure. This structure helped keep my students on track, facilitated my role of asking specific and thoughtful questions throughout the process, and allowed me to easily integrate technology, engineering, math, the arts, and science (Cook & Bush, 2018; Fouche & Crowley, 2017; Gess, 2017; Tucker-Raymond & Gravel, 2019). For my students, it allowed them an opportunity to explore a real problem within their province. The approach provoked opportunities for students to design a solution, and present that solution to a real audience (e.g., peers and a local engineer). They built their own understanding of the curriculum expectations through work that was engaging, meaningful, and driven by them while utilizing the DTP.


In 2019, I came across an article while writing a paper on DT. The article was written by Andrew Watson, a high school art teacher in Virginia, who was using DT to help his students solve their own social and emotional problems. It was this article that got me thinking about the potential of DT to solve problems outside of just my science class. I began seeing that DT was more than simply designing things. Specifically, I began seeing that DT had the potential to design thinking, collaboration, communication, and empathy.

ECO-FRIENDLY

MINING SOLUTIONS






THE RING OF FIRE, NORTHERN ONTARIO



During EMPATHIZE

Students chose a group to represent and researched that stakeholder's point of view. For example, several of my students chose to represent environmental groups who were opposed to the development due to the negative effects mining has on the environment (S – Science, T – Technology, A – Language Arts).



DURING DEFINE



THIS SAME GROUP OF STUDENTS RESEARCHED MINING WITH A SPECIFIC EMPHASIS ON THE ENVIRONMENT. THEY LOOKED AT THE MOST HAZARDOUS ELEMENTS OF MINING: THE ACTIONS THAT CAUSE THE MOST HARM TO THE LAND, AIR, AND WATER AROUND THE SITE (S-SCIENCE, T – TECHNOLOGY, A – LANGUAGE ARTS, M- MATH).



During IDEATE

Students brainstormed a variety of solutions to eliminate and manage mining pollution. They tackled each of the specific problems they had read about and produced individual solutions to each, creating an overall eco-friendly mining camp. Ideas included large bubbles to collect air pollution, huge pumps to collect and clean water, and elaborate tunnels with safety lining and oxygen to ensure protection at every level (S – Science, T – Technology, E – Engineering, A – Language & Visual Arts, M – Math).

During Prototype & Test

Prototypes were built, and we presented and tested our designs via Google Hangout to a local engineer for feedback. Based on that feedback, students went back to their designs at the ideate stage to revise, rebuild and, ultimately, retest (S – Science, T– Technology, E – Engineering A – Language Arts, M – Math).

DESIGN THINKING & STEAM LEARNING


GRADE 4 

Figure 6. Design thinking in my Grade 4 classroom (2019).

Watson's case study (2015) also introduced me to a new DT model (see Figure 7) created by Nick DiGiorgio, which immediately sparked my attention. DiGiorgio's model extended the four stages I had been using by Hasso into seven, with easy-to-understand prompts for guidance. I appreciated that this model could be used by both teachers and students, as referenced by Watson (2015) in his study.

Throughout the case study, Watson intentionally taught the process, using DiGiorgio's model to name and break apart each aspect of DT. He asked students to reflect upon the process and here is how they described each step:

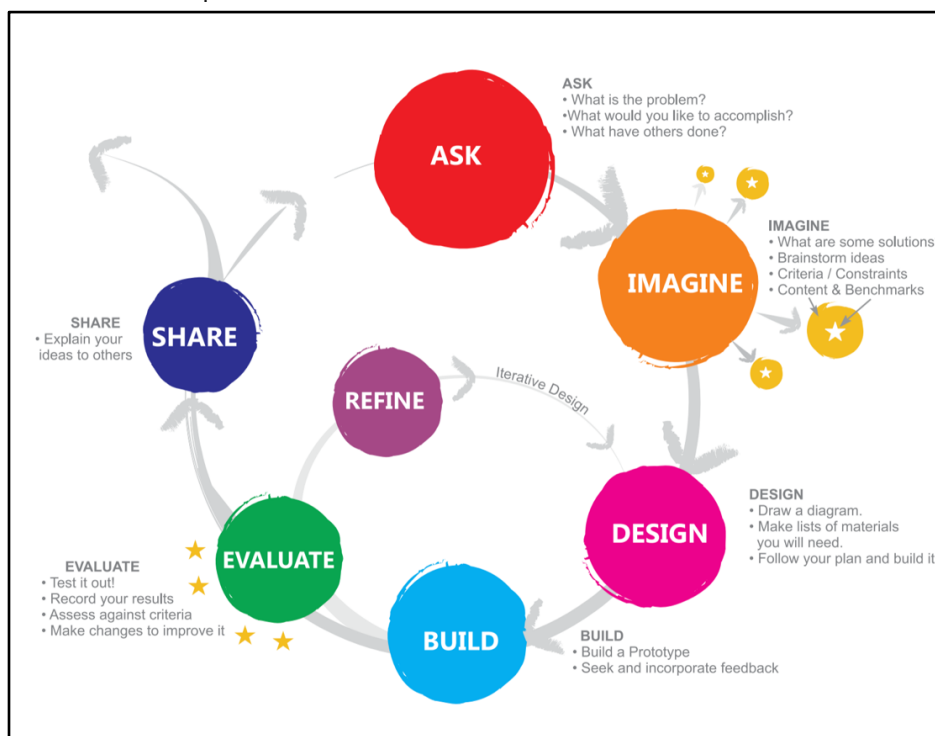


Figure 7. The design thinking process developed by Nick DiGiorgio for FabLab and the Cleveland Public Schools in 2012 (Watson, 2015, p. 13).

Students described ASK as the place to make sense of things and to clarify, especially if the problem was not clear. During IMAGINE, students described brainstorming solutions, getting creative, and doing research or mind-mapping. DESIGN was where they envisioned their solutions and visually communicated their ideas from IMAGINE. BUILDING, EVALUATING, and REFINING were seen in constant motion, working together to create, receive feedback, and rebuild. SHARING was their last step, a time to share their finished work with others. Watson and his students used DT to solve problems, to communicate, and to collaborate with each other, learning about themselves along the way (2015).

DT research and my experiences as an educator led me to believe in the potential of DT to create a learning environment in which CE could be nurtured. DT intentionally and purposefully enables designers to think about others with an overall purpose to share, contributing towards the solution of the initial problem. Although I had used this pedagogy in the past, I wondered if I could refocus, from the designing of a final product to the designing of CE. I wondered if this pedagogy could help to frame an environment where students could learn about themselves and each other. I wondered if students could design a solution, to help society understand and identify with the differences within communities. In a time when social isolation has become society's norm, the need to think

critically about the way we treat one another is crucial. I wondered if DT would nurture this critical thought and empathy.

Photography as Critical Media Literacy (CML)

We live in a visual society. Images are all around children, bombarding them with messages about their world and those who live in it. Turn on the television, swipe open a phone, drive down the street, or walk into a store: images are everywhere. Visual literacy within the classroom can provide opportunities for learners such as connecting school to home, reflecting on identity, and developing the ability to critically read texts (Buckingham, 2003, 2019; Rowsell et al., 2012). CML pedagogies parallel visual literacy opportunities, and can teach students to read, analyze, and decode media and additionally use it to create multimodal projects for self-expression (Kellner & Share, 2019). CML goes beyond simply using and reconstructing media to include engaging in meaningful conversations and producing media to engage in and solve social problems (Kellner & Share, 2019; Mirra et al., 2018).

According to Kellner and Share (2019), the accessibility of photography offers teachers an easy entry point into teaching CML. Today, cameras can be found on multiple digital devices, and many students already have access to, and knowledge of, creating and manipulating photos. Using photography as a mode to spark CML allows

students to bring their own knowledge and experiences into the classroom, exploring a mode of literacy which they are already using to make meaning in their lives outside of school (Kellner & Share, 2019; Rabadan, 2015)). In addition, photography allows all students, regardless of their ability to read, to take part, thereby expanding the potential for learning (Schiller & Tillett, 2004). Aside from access, photography also allows for greater self-expression and creativity (Eisner, 2002).

Mirra et al. (2018) propose that CML can be broken into four types of digital engagement: (a) digital consumption, (b) critical digital production, (c) critical distribution, and (d) critical digital invention (2018). These areas allow students to engage deeply into motives, techniques, tools, and the effects that multimodal texts have on society and public life. These four types of engagement promote critical reading through various modes such as the visual, realized through photography, which can allow students to examine multiple points of view that can be incorporated into student production and distribution. CML pedagogies promote student agency and voice, with the potential to inspire community awareness and change (Ching et al., 2006; Mirra et al., 2018).

Wendy Ewald: Photography is Community & Collaboration

Throughout this project, I was drawn to the experiences and work of Wendy Ewald. Ewald is a teacher, photographer, and storyteller who has

been exploring photography with children and young adults since her time in high school. Ewald has since worked with students around the world, encouraging and helping to facilitate their self-expression through photography. Ewald has shared ideas with other educators through both her published work and a teacher training program called Literacy Through Photography (LTP) at Duke University's Center for Documentary Studies (Ewald, 2012; Hyde, 2005).

Many connections can be made between the work Ewald has done with students and CML. Ewald immerses herself into communities, helping students both read and write photos that they view and produce. Ewald believes that allowing student agency is essential, as children can illustrate, understand, and engage with socially relevant, critical issues happening to and around them. Ewald encourages teachers to listen to and follow their students' interests to allow this work to organically occur. Spending time on projects is crucial, as Ewald believes that student work evolves and grows with more practice and experience. Ewald believes this work is highly collaborative, both between students *and* between student and teacher (Azoulay, 2016; Ewald, 2012; Weitz, 2020).

Many of Ewald's projects explore complex community issues. Ewald enters these spaces as both a photographer and teacher, but quickly shows students that she is a facilitator: one that is there to guide and

teach, but ultimately, to follow their map to wherever the end takes them. This style of teaching is essential for both DT and CML, making Ewald's work worthy of exploration and adaptation for my research.

Ewald's work inspired the addition of CML into this project. After reading accounts from projects such as *The Best Part of Me* (Ewald, 2012), the connection between deeply exploring the media of photography and the nurturing of CE was evident. In Ewald's project, students reflected upon the body part or feature that they appreciated about themselves the most, and then photographed and wrote about it. Although this may seem like a project that valued individuality, Ewald had students work together, guide learning, and offer feedback, which provided an ideal environment for students to learn about one another and recognize their similarities rather than their differences.

Ewald's thoughtful and reflective structure mirrors DT. Starting with ASK, she began conversations with students about topics of concern to them (e.g., *Black Self/White Self*, *American Alphabets*) before having them IMAGINE a solution (Ewald, 2012). Although Ewald does not label her process as DT, her intentionality and commitment to time spent on reflection and refinement has parallels to the pedagogy I used in my classroom and inspired the addition of CML (specifically photography). Ewald's work made me wonder how I could create a similar opportunity

for my students – an opportunity relevant and important to them. I began wondering how CE could be nurtured by combining the pedagogies of DT and CML.

Imagining a Solution

As stated at the beginning of this section, IMAGINE is a place for designers to investigate what others have done as they envision possible solutions to their problem. As I considered research and my own experiences as an educator, I began to wonder if I could nurture CE by switching my instructional focus from content to competencies. I began to wonder which pedagogies could help to create an environment that would allow students to explore social issues that were relevant to their lives. I began to envision a solution, one rooted in DT and CML. Based on my experiences and research, I was eager to investigate the following question: how can critical empathy be nurtured within my class community by partnering design thinking and critical media literacy?

DESIGN

Designing a Plan for Instruction & Research



Figure 8. A student worked on their design plan for an important family object.

During the DESIGN stage, a plan is developed to explore the ideas created during IMAGINE. As a teacher-learner, this plan involved creating a learning cycle that incorporated CML while also following the stages in the DTP. As a teacher-researcher, I designed a plan that would generate the data needed to explore my research question. DESIGN was set up in this way to illustrate the two roles of the teacher clearly: designing a plan for the classroom (learner) and designing a plan for research (researcher). Although these roles often merged, the following section will help to clarify my thinking within each role.

Designing the Teacher-Learner: A Plan for Instruction

As described in ASK and IMAGINE, this study set out to explore how CE could be nurtured using specific pedagogy. I was excited to begin – considering the current need for CE – and eager to switch my focus to nurturing this competency within students. This switch, as mentioned in the previous two sections, would be new learning for me, and an opportunity to reflect on the focus of my practice as a teacher-learner. The following areas within this section highlight a sample of the factors that influenced my decisions within this role, including provincial and federal restrictions in place due to COVID-19.

Designing the Learning Environment



Figure 9. My classroom learning environment in 2019/20 vs. 2020/21.

The classroom learning environment provides a perfect illustration of these restrictions. Our in-person classroom (2020/21) had to be designed with social-distancing provisions in place. This was a sharp contrast to the typical learning environment that I would create for my students, one with flexible seating and multiple open areas for small group collaboration. In the 2019/20 image shown above (see Figure 9), you can see the open and flexible seating that I made available to my students. Additionally,

tables were different sizes to allow for flexible groupings and opportunities for collaboration. I also established a large, open, carpeted space for both small and whole group discussions. My 2020/21 classroom (see Figure 9), however, shows the provincial/board-mandated seating arrangement, which was designed to allow maximum space for social distancing. I had to stagger rows, monitor, and control entry and exit traffic flow, and was told that I had to maintain a minimum distance from students while instructing.

Group work was not allowed at our school until February 2021, and even then, social distancing and other safety considerations had to be applied. Up until that February, students worked entirely on their own, and were not allowed to get up from their individual desks unless they had permission to use the washroom or if it was recess time, when another set of rules for safety had to be followed (e.g., walk on yellow lines, stand at designated spots). With new provincial guidelines mandating masks for primary students, we were allowed to begin modified group work in February. Areas and equipment had to be sanitized, and students were asked to use hand sanitizer before beginning any activity. Students were also encouraged to continue to social distance as much as possible.

In April 2021, schools were closed for in-person learning, and the virtual environment presented its own new set of challenges. Five students

did not participate at all during this time, and of the remaining 15 students, attendance and participation were considerably lower than engagement during in-person learning. Each family had their own unique situation and therefore, the ability to support their children during online learning varied. Most students worked from couches, beds, floors, and kitchen tables with multiple family members present or in the general vicinity. Distractions were plentiful and included pets, siblings, toys, and levels of noise within their surroundings.

Designing the Learning Context

The class spent the school year exploring the question, *why should we respect the diverse cultures and traditions within our community?* This question originated from the Ontario social studies curriculum (OME, 2018) and was used to guide our year-long inquiry.

Inspired by the work of Wendy Ewald, I wanted students to design and build photos of important family objects that demonstrated and communicated to others something about their culture or family traditions. Ewald (2012) often has students take pictures of themselves (e.g., *The Best Part of Me, Black Self/White Self*) to communicate their thoughts on numerous issues such as community, identity, and equity. Unlike Ewald, in these examples, I decided to focus on important family objects or artifacts. According to Pahl and Rowsell (2010), artifacts have

the potential to bring everyday experiences and life into the classroom. Artifacts can represent culture, allowing students an avenue to bridge home and school for themselves, holding the potential to inform and educate others (Pahl & Rowsell, 2010). Using projects like Ewald's, and artifactual literacy research as inspiration and guidance, I began framing our design challenge.

I used the design thinking process (see Figure 7) described in IMAGINE (i.e., ASK, IMAGINE, DESIGN, BUILD, EVALUATE, REFINE, and SHARE) daily to inform my next teaching point (see Table 1). This process does not have a beginning or end; rather, it is in constant movement, reflecting where students are in the process, in addition to addressing their questions and problems. I used the guiding questions and understandings of CML, outlined by Kellner and Share (2019), in addition to the types of digital engagement described by Mirra (2018), to integrate CML into daily lessons.

Throughout the course of this project, students created photos, drawings, and poems connected to their important family objects. Each student had an opportunity to present their original photo, describing and sharing their family connection to the item. With the knowledge gained from the student-photographer, classmates edited each other's photos using Pixlr Editor to further illustrate the item's importance for the original

photographer. In the last stage of design, students created a website for others within the school and community to view and interact with their work. In addition, this website was posted in the Niagara Falls Art Gallery's Community Gallery. Throughout the process, multiple picture books were read and analyzed to gain a deeper understanding of others.

Photographs from outside sources were also analyzed to explore students' ability to recognize emotions and points of view.

Considering Community, School, & Classroom Context

The student participants live in a culturally, linguistically, and socio-economically diverse area of Niagara. According to Education Quality and Accountability Office (EQAO) data from 2019, looking specifically at the Grade 3 cohort, 36% of students were English Language Learners (ELL), compared to 7% throughout the same school board and 14% across the province. This was important information to reflect upon as a teacher-learner; knowing the linguistically and culturally diverse nature of the community informed instructional decisions such as which texts to read and discuss with students (e.g., Muhammad's (2020) *The Proudest Blue: A Story of Hijab and Family* and Campbell's (2008) *Shin-Chi's Canoe*).

Classroom discussions and student questions about cultures and traditions from September to December 2020 made it seem to me that students knew very little about their classmates outside of school. As a

group, we co-created our definition of culture and traditions – *culture* being a group of people that share a common element (e.g., your classroom, religion, race, nationality) and *traditions* being things that culture does repeatedly (i.e., our class [culture] plays the online game Among Us [tradition] every Thursday at 6 pm). Our understanding of culture and traditions was representative of where students were along their journey to understanding both themselves and others. The words *culture* and *tradition* were both relatively new to them (although used in the social studies curriculum repeatedly); therefore, the co-creation of definitions to provide students with a starting point to be built upon and discussed further as knowledge evolved throughout the process was important.

It also appeared to me, through classroom participation, that many students seemed to enjoy talking about their family culture and traditions, often making personal connections to issues we were exploring. The lesson cycle described at the end of this section (see Table 1) evolved from the initial desire to allow students to have the opportunity and voice to share their stories with one another. Table 1 defines the process we embarked upon, photographing important family objects that represented family culture and traditions to the class.

Designing the Teacher Researcher: A Plan for Research

As a teacher-researcher, I engaged in action research to inform my practice. Action research felt like the best fit for me, as it allows an educator to explore questions that are relevant and timely to them (McAteer, 2013; Mills, 2018; Pine, 2009). Having previously taught both CML and the DTP, I wondered how combining these pedagogies could influence and nurture classroom community and, specifically, student empathy. Throughout the project, my daily reflections about students led to my planning and decision-making. As a teacher-researcher, I allowed myself the time and focus to collect and analyze my data – which, in many ways, was not a new practice, but rather the normal process within my teacher practice. What was new, however, was the depth and breadth with which I was able to slow down the movements and moments within my room to step back and consider not only the next design for student learning, but also the overall design of my practice. According to scholars (Mills, 2018; Pine, 2009) *action research* allows teachers this time and opportunity to examine moments within the classroom to benefit both educator and student, making action research the best fit for me. The following areas within this section highlight the research design and the methodology that influenced my decisions within this role.

Considering Methodology: Arts-Informed Multimodal Action Research

This action research took place within my classroom, incorporating photography into a multimodal, arts-informed project.

Considering Ethics: Participants & Site

This study took place in my classroom (in-person and virtual) with a group of 20 students in Grades 2 and 3. The overarching classroom inquiry question – *why should we respect the diverse cultures and traditions within our community?* – was taken from the Ontario social studies curriculum (OME, 2013), and was the question we explored as a group from September until June 2021. This is different from the research question I was exploring as a teacher-researcher: *how can critical empathy be nurtured within my class community by partnering design thinking and critical media literacy?* The research collected for this project began in January 2021 and continued for 6 months, looking specifically at family objects and traditions. Collectively, as a class, we engaged with this work in 40-minute blocks ranging from one to four times a week during the data collection phase.

Student participants were introduced to this project in December 2020. The class and I discussed possible activities, and the use of photography in class. I explained that I would be using the data collected to write my graduate thesis. Students were allowed to ask questions and

consider if they would like to be a part of the project. Information and permission packages were sent home for parents to read through and consider. A video, created by Dr. Collier (my graduate advisor), was posted on our class website for further explanation and clarification for participants. My ethics clearance was based on a modification to Dr. Collier's own research project entitled *Visualizing citizenship: Children reading and writing photographs* (REB File #19-113).

All permission forms were returned, and Dr. Collier and I made sure to remind students that we were collecting data throughout the project. I was intentional in asking students each day before recording if they consented to their conversations being taped, and additionally asked permission before taking photos of students at work. Pseudonyms will mask the identity of the participants.

Why Action Research using the Design Thinking Process?

Kurt Lewin (1890-1947) was the first scholar to use the term *action research*. In the 1940s, Lewin used this approach to study practical, everyday problems. His work led to the understanding that when research includes ordinary people exploring common problems, the potential to reflect, discuss, and act is powerful (Adelman, 1993). Within an educational context, action research has the potential to influence classroom and school culture, as common problems are explored through

this socially responsive research. In line with Lewin's account, my research involved a group of students as they explored culture and traditions, allowing me to reflect upon nurturing CE both within our classroom and beyond.

I am drawn to action research, as it is a form of qualitative research where the problem and methods can evolve as the research progresses and more is observed and noticed within the research (Mills, 2018). Action research involves exploring the learning environment to gain a deeper understanding of how students learn or how something works within that environment. Overall, classroom action research is carried out to improve the lives of children and to learn about the craft of teaching (Pine, 2009). Action research can be a critical examination of classroom teaching principles, and the effects that a teacher's actions have on the children in their care. Educational change that enhances the lives of children is the main goal of action research, but action research can also enhance the lives of professionals (McAteer, 2013; Mills, 2018; Pine, 2009). My research impacted the lives of the children within my care and made me reflect upon the focus of my overall practice (explored more thoroughly in SHARE).

Action research projects often follow moving parts of a cycle (Mills, 2018). Mills explains that for teachers, this type of work is done for

themselves, is not imposed by administration, and is relevant to the questions they have about teaching and learning. This approach matched my individual desire to learn more about nurturing CE. Mills suggests that the four parts of this process include: (a) identify an area of focus; (b) collect data; (c) analyze and interpret data; and (d) develop an action plan. As a teacher who has used inquiry methods for years, these parts seem remarkably familiar to the models I use during planning and instruction. As this study sought to explore DT and given that action research explores areas of teacher interest, it made sense to use the DTP as my "moving parts" like those identified by Mills. I used this process as my guide, specifically the adaptation created by Nick DiGiorgio (see Figure 7 in IMAGINE), which was also used to inform my teaching (see Table 1). Action research allows teachers to explore issues of importance to them; thus, the process should also match the teacher's interests, making the work specific to that teacher and their desire to learn.

By focusing on a problem that is relevant and authentic to a specific classroom or school, teacher action research can bring attention to timely issues and enact change to improve both teacher and student experiences (Pine, 2009). My research question explored the timely need for CE (IMAGINE), bringing attention to larger questions regarding what and how content is taught. This question was both specific and relevant to

my class, sparked by a class conversation which brought to light the fact that students did not know what the word *Indigenous* meant, nor did they know about each other's cultures or traditions. Using an action research design allowed students to explore their questions while providing a closer examination of how CE is nurtured within a specific learning environment.

Action research is complex and demanding, as the researcher has multiple roles (teacher-learner and teacher-researcher) and is responsible for the careful planning and structuring of lessons, yet is also simultaneously generating and collecting data for analysis (see Table 1). Pine (2009) stresses the importance of finding critical friends to engage with during the research study to assist with this work. My circle of support included Dr. Diane Collier and her two research assistants. Dr. Collier joined my class in 2019, making regular visits to observe the ways in which children made meaning as part of her own research project, *Visualizing Citizenship: Children Reading and Writing Photographs* (2019). COVID-19 restrictions meant Dr. Collier would no longer be able to physically join our class in 2020/21, so she began joining via an iPad to continue her observations and interactions with students. Throughout, Dr. Collier acted as my "critical friend," helping to define the problem, formulate questions, generate, collect, and analyze data, and discuss the data and findings of the study (Bambino, 2002; Cushman, 1998). This level of critical collegiality

helped me to sort through the “messiness” of action research: the overwhelming amounts of data, and the constantly changing circumstances and complexities of this project amid the global pandemic (Cook, 1998; Mellor, 2001).

Why Arts-Informed?

Arts-informed research (AIR) is research that is influenced by, but not based within, the arts (Cole & Knowles, 2008). AIR can include multiple forms of creativity (e.g., literary, visual, performing arts), with an intent to strengthen our understanding of the human condition through inquiry (Cahnmann-Taylor, 2018; Cole & Knowles, 2008). I used visual materials as an enhancement to inform and strengthen my action research, not as a stand-alone method. I incorporated photography, drawings, and poetry into my data collection to enhance my understanding of CE within our classroom learning environment. Additionally, I created my own visual collages as part of my analysis. These collages were used to consolidate my own understanding and serve as an example for other teachers who may wish to adopt this type of teaching.

Why Photography as Arts-Informed Practice?

Photographs were central to my multimodal collection of data. As outlined in IMAGINE, my work as both a teacher and researcher has been influenced by Wendy Ewald. Early on in Ewald's career, she questioned

the relationship between the photographer and subject, recognizing that students' own photographs were better able to capture and illustrate important aspects of their lives (Hyde, 2005). Ewald's work inspired my decision to have students photograph important family objects which illustrate a piece of their culture or traditions. Ewald's work focused on collaboration between teacher and student, and photographer and subject, with the teacher providing the framework for student ideas, expressions, and thoughts (Weinberg & Stahel, 2000). This process mirrors my own belief related to student agency, and the need for the disruption of traditional power dynamics between teacher and student. Inspired by Ewald, photos were central to this research, as students created, analyzed, revised, and wrote about their objects.

My students and I used photography to advance our knowledge in relation to our questions, as we explored everyday moments that created meaning. According to Eisner, these experiences shape our understanding of the world, which is also qualitative, giving value and validity to AIR (1993). For example, students considered how to make peer photos look important, reflecting not only upon the technical aspects of photo editing, but also the culture and traditions of that student's photo. Additionally, I used screenshots of videos to analyze and reflect upon my research question. These photos and screenshots helped to inform the

research process, as I reflected upon them weekly, considering evolving and emerging themes. Following the DTP, students created and analyzed their photos of culture and traditions. Following the DTP (influenced by Charles Suchar's framework for photo documentation in the next section), I created, reflected upon, and analyzed photos by and of the students as I considered my research question. By enhancing action research with the arts, I was able to capture some of what my students experienced. Cole and Knowles (2008) believe this merging of inquiry and representation brings research closer to those involved (2008). Photography also informed the representation of my research (EVALUATE & REFINE), creating a multimodal reflection for not only the purpose of this research, but also to inform and inspire change in the broader educational community – a further goal of AIR (Cole & Knowles, 2008)

Why Multimodality in Arts-Informed Practice?

The classroom environment is complex, with multiple factors at work influencing learning. As a teacher-learner, I used observations, conversations, and products to assess learning and drive instruction. Similarly, as a teacher-researcher, I used multiple modes of data (e.g., photos, video, journaling, writing) to inform my analysis to capture meaning within the complex classroom environment. *Multimodality* describes this type of data collection where meaning is made,

interpreted, and remade through many representations (Kress & van Leeuwen, 2001). *Multimodal analysis* considers the interaction between modes, and how this interaction can create meaning that is more reflective than one mode individually (Bazalgette & Buckingham, 2013). My data includes audio and video recordings that capture student interaction, with additional modes such as photography, drawings, and webpages. My analysis considered all these moving parts of data to provide a deeper analysis than one data slice alone could inspire. Each specific mode will be further described in BUILD, where I illustrate my data collection and analysis processes.

As Cole and Knowles outline, AIR is grounded in several defining elements (2008). Here, I will list three of the elements, and state how this multimodal project incorporated them.

- ◆ Commitment to a Particular Art Form – Photography and screenshots.
- ◆ Methodological Integrity – Photography is a component of CML both in analysis and form. This form can easily and organically be explored through the DTP.
- ◆ Audience Reaching Beyond Academia – My intended audience includes the educational community (research) and my school community (student work – e.g., final website [see SHARE]).

Designing My Instruction & Research: A Summary

Within this DESIGN section, I have explained decisions made regarding my instruction and research. It is not possible to always keep teacher and researcher roles separate, as I am one person who often was acting as both simultaneously. The decisions made regarding my learning environment, context, design, and methods intertwined between roles, and were impossible to completely stand alone. As a teacher, I am an action researcher daily, reflecting and analyzing upon observations, conversations, and products to inform my best practice. This project allowed me to slow down and specifically look at nurturing CE. The DTP acted as both a framework for my teaching and my action research (see Table 1). Visual materials enhanced my teaching (as part of CML) and my research (multimodal).

Table 1

DTP Used as a Framework for my Teaching and Research

	Teacher-Researcher	Teacher-Learner
Ask	By partnering DT and CML, in what ways will CE be nurtured within my class community?	Why should we respect the diverse cultures and traditions within our community? <i>Initial thoughts shared through discussion</i>
Imagine	What are some solutions? What have others done? Review related literature: CE, DT, & CML CML: Critical digital consumption (Mirra, 2018)	How can an object represent family? <i>Explore multiple fiction texts – Shin Chi's Canoe and The Proudest Blue</i> <i>Brainstorm personal family objects</i>
Design	Designing the teacher-learner: A plan for instruction <ul style="list-style-type: none"> • Learning environment • Learning context • Considering community, school, & classroom context Designing the teacher-researcher: A plan for research <ul style="list-style-type: none"> • Considering ethics • Why action research? • Why arts-informed? • Why multimodal? CML: Critical digital consumption (Mirra, 2018)	Explore photography elements – how do we make something look important? Practice – Reflect – Develop criteria together <i>Complete a design plan for photographing family object</i>
Build	Building a plan for data collection <ul style="list-style-type: none"> • Photography & screenshots • Writing & journaling • Video & audio recordings Building a plan for data analysis: Using the visual <ul style="list-style-type: none"> • Photo documentation 	Technical editing – explore editing features and become experts – consider others as edits are made <i>Use Pixlr Editor to make our photos look important</i>

	CML: Critical digital production (Mirra, 2018)	
Evaluate	<p>Presentation of findings</p> <p>The emergence of codes</p> <ul style="list-style-type: none"> • Collaboration, communication, & problem solving • Student agency, risk taking, & leadership • Feelings, point of view, & relationships <p>CML: Critical digital production (Mirra, 2018)</p>	<p>Looking at examples – discussing photo elements – what makes something look important? – what effects do we like/dislike?</p> <p><i>Discussion sessions & further editing using Pixlr</i></p>
Refine	<p>Reflect on feedback (ongoing throughout the process)</p> <p>CML: Critical digital production (Mirra, 2018)</p>	<p>Reflecting on the feedback provided from peers</p> <p><i>Students produce a final photo</i></p> <p><i>Additional representations of the object are made, including voice recordings and drawings</i></p>
Share	<p>Summary of overall themes</p> <ul style="list-style-type: none"> • Working towards a common goal • Building experts among Us • Understanding US and ME <p>Implications</p> <ul style="list-style-type: none"> • Educators • Teacher education <p>Limitations & future research</p> <ul style="list-style-type: none"> • COVID-19 • Schools & grad studies <p>Concluding thought</p> <p>CML: Critical distribution (Mirra, 2018)</p>	<p>Share work with others & engage in further discussions of reflection</p> <p><i>Work is shared on co-created website – posted on local art gallery website to reach broader community – website allows for audience reflection and engagement with work</i></p>

Note. Action research and the DTP do not follow a linear path. Within each section, as questions arose, time was spent exploring and investigating them. Table 1 illustrates the big ideas within this project. These ideas were not known at the beginning of the journey and within each section, multiple side lessons, activities, and discussions occurred. These lessons took place over the course of 6 months.

BUILD

Build a Plan for the Collection & Analysis of
Arts-Informed Multimodal Action Research



Figure 10. Photo taken by students in my classroom as they defined criteria for making an item look important.

During the BUILD stage, a plan is developed to collect data and build evidence to address the research question. This stage involved making decisions about how to establish procedures for the collection of multiple modes of data, as well as decisions regarding how to construct a plan for analysis.

Collection & Analysis Intertwined: Introduction

As I worked through this project as both a teacher-learner and a teacher-researcher, I realized that as intertwined as my roles were, so too were data collection and analysis. Perhaps this was resultant from my reflective nature as an educator, but regardless, it was difficult to separate the two into completely different categories. Each week, my analysis of data in turn influenced what I collected the following week. This introduction explains my thinking while I developed the plan for collection and analysis.

My approach for data collection, analysis, and interpretation mirrored a photo documentation framework developed and implemented by Charles Suchar (Rose, 2014). Suchar references three stages in his process, which he used as he studied urban changes in Chicago through photo documentation. During the first stage, Suchar created a *shooting script* – a list of guiding questions, based on early codes, to help him remember his purpose – which was grounded in his

overall research question. During the second stage, he carefully examined the photos, adding detailed notes and labels to them. In this stage, he paid greater attention to the codes emerging to begin sorting the photographs for further analysis – again, paying attention to the research question and ensuring the photos were related and connected to the bigger picture. In the third stage, Suchar considered refining his shooting script – those questions he asked himself while photographing – based on new evidence that may have emerged, and thus, the stages began again (Rose, 2014). Suchar believes that this process is grounded in strategic and focused exploration of the research question and calls this the *interrogatory principle* (1997). Suchar's process provides the structure needed to create meaning from photographs, using descriptive devices to add both validity and understanding to what is seen.

I chose Suchar's approach as a model because of its non-linear parallels to DT my overarching framework. His three stages align with design, build, and evaluate in DT, moving between data collection and analysis simultaneously, with new reflections driving not only what I was looking for as a researcher, but also what I was planning as a teacher. Table 2 illustrates my approach used in both data collection and analysis. Design, build, and evaluate can be seen in the *Stage* section of the table, my adaptation of Suchar's approach. Included in *Stage* is a general

explanation of what I was designing, building, and evaluating throughout the research. The *Description* column serves to further illustrate my adaptation, with examples from both my roles as teacher-learner and teacher-researcher.

Table 2

Adaptation of Suchar's Framework for Data Collection and Analysis

Stage	Description
<p>DESIGN Designing a focus for instruction and data collection based on my reflection of the previous activity; observed through data collection (i.e., photos, drawings, audio)</p> <p><i>Based on Suchar's shooting script</i></p>	<p>Questions to consider as data is collected: These questions guide data collection and are connected to my research question.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Are students engaged? • Are students considering each other's point of view? <p>Teacher-Learner – INSTRUCTION Design Example:</p> <ul style="list-style-type: none"> • Explore photography elements – how do we make something look important? • Practice – Reflect – Develop criteria together
<p>BUILD Building my journal using the data collected from that week</p> <p><i>Based on Suchar's second stage: Adding detailed description to photos</i></p>	<p>This was done in my weekly journals, as outlined in the data collection section.</p> <p>Additionally, I was able to listen to the voice recordings & videos made during the lessons that photos/videos were taken in. This allowed me to capture not only my observations/wonderings of what was happening, but also student conversations. These notes were also added to my journal.</p> <p>Example:</p> <ul style="list-style-type: none"> • Students did not appear to consider each other's point of view – some students were removed from the activity, hovering on the outskirts of the group

<p>EVALUATE Evaluating my journal notes to identify patterns and ideas for the next session</p> <p><i>Based on Suchar's refining stage</i></p>	<p>Refined Questions after Journal Reflection: Example:</p> <ul style="list-style-type: none"> • Are students actively communicating? • Can I see collaboration? • Is there student agency? What does this look like? • Are students taking risks? What does this look like? <p>These new questions would be used to begin the cycle again, a new focus for ongoing data collection and analysis.</p> <p>Example:</p> <ul style="list-style-type: none"> • I noticed that students were not talking within the group – communication stood out as an emerging pattern, seen across groups and days within the week.
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Building a Plan for Multimodal Data Collection

My data was collected from multiple sources (see Figure 11). As this action research is informed by the arts, visual materials (i.e., photos, video, drawings) made up a number of these sources. Rose (2014) defines *visual methods* as using “visual materials of some kind as part of the process of generating evidence in order to explore the research questions” (p. xxii). The visual materials were made as part of the research project itself. Often, research involving photographs explores photos that already exist, whereas *photo documentation* involves the research participants (i.e., myself and my students) creating visual materials, and can include multiple forms such as photography, video, diagrams, and drawings

(Rose, 2014). Additionally, I used visual materials throughout the project to guide my journaling and reflection.

Furthermore, I used audio and video recordings to clarify meanings and interpretations, as well as for further analysis of the data. In this way, I built a collection of data that could be used for analysis, each piece important and contributing to the overall understandings that emerged.

Photographs, Video Screenshots, & Student Drawings/Writing

Throughout the project, I captured photos on an ongoing basis. With my research question always in mind, I took photos of students at work. These photos were then added to my journal each week, where I was able to do the documentary work that Suchar (1997) speaks of. Adding the photos became a reflective process, adding notes and details which, in turn, led to further questions and wonderings to consider during the following week's lessons (shown further on in this section).

Many classroom interactions were also recorded in either video or audio format. The video captured was often recorded by Dr. Collier virtually in the class, connected through Microsoft TEAMS on an iPad. Having this footage of students allowed us to see another perspective of what was happening in the classroom. Moments from these videos were used as screenshot photos, and were further analyzed using my approach

based on Suchar's framework. Student drawings of their important objects were also added and reflected upon in my journal.

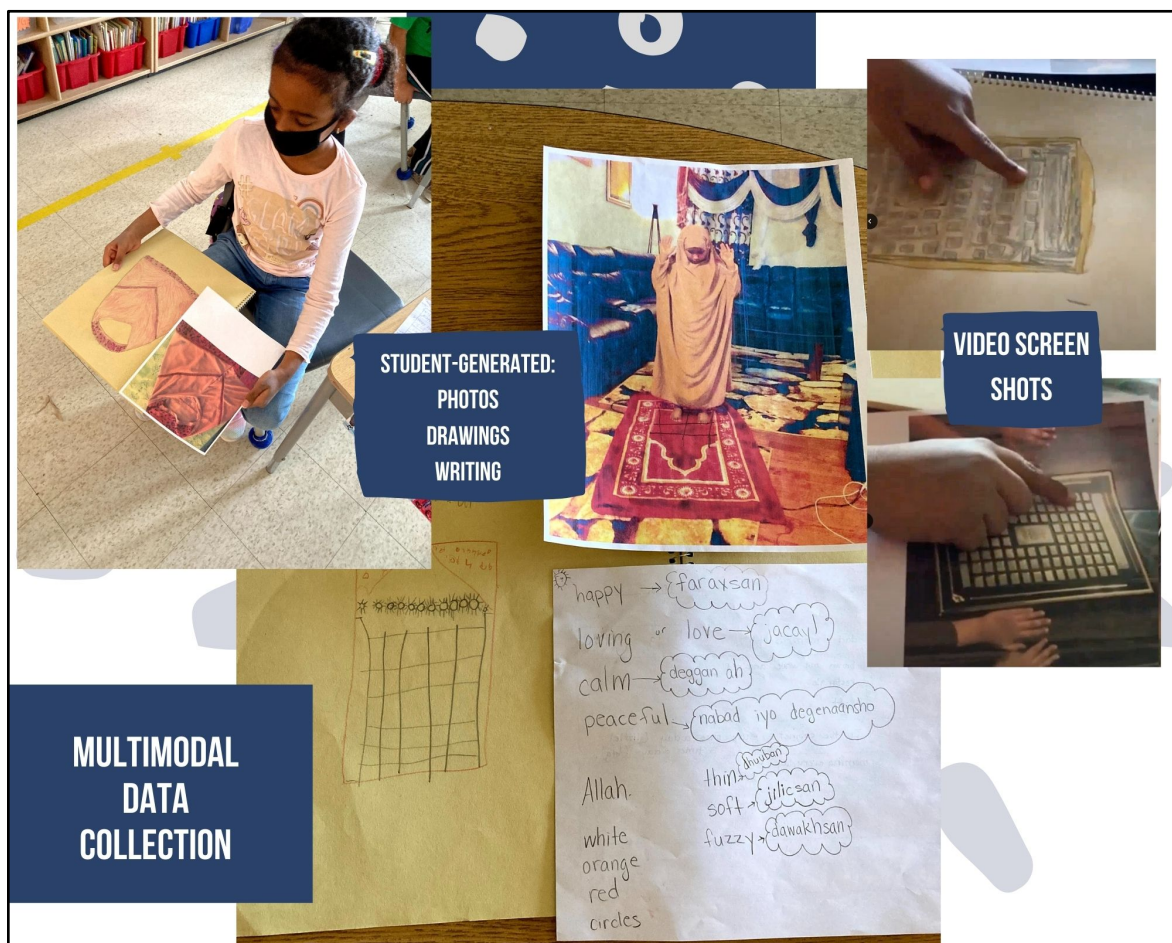


Figure 11. Examples of my multimodal data collection.


Writing, Journaling, & Audio Recordings

Throughout this project, I reflected weekly on the work we were doing. My journal incorporated not only my thoughts, reflections, and questions, but also included photos, drawings, and diagrams as I worked to capture what was happening in our class environment (see Figure 12).

It is through this writing that I was able to see patterns emerge, codes that I would use to further analysis my data. According to Pine (2013), writing is one of the most powerful tools for growth and reflection.

I organized my writing in both an online journal (see Figure 12) and a physical notebook (see Figure 13). The online journal was my place of weekly reflection in a two-columned document. The left side was used to insert pictures that I had taken of students and learning, and to briefly describe the activities that took place that week. The right-hand column was used as a space to reflect and question, a place to write my *insight notes*, a process that Kochendorfer (1994) explains begins with reflections such as *I wonder*, and *I noticed*. This is what Suchar (2017) describes as the *documentary process* and the *interrogatory principle* of analysis: using photos (based on my shooting script) to answer and reflect upon questions that, in turn, generate further codes for exploration. Figure 12, a representation of my online journal, illustrates an example of a photo taken by me of learning, with the audio transcript below the photo from the activity, and my reflection afterwards relating back to my overall question about empathy in addition to teacher instruction.

Monday, March 22nd, Reworking the Piece



Audio file for this week in SS folder - documents the collaboration between Jack and Nya

Design Thinking:

Problem solving: Groups were using the D2L sites as a reference tool to access help - also called upon the experts for features - Lyric - "We need help from the colour experts as we're stuck".

Collaboration: I saw students dividing the work not working collaboratively together - next day will make this a focus

Listen to Jack and Kaleb MP3

CML

Compare and contrast the photos - hard to pull this out during consolidation - students edited the photos but not sure how much thought they actually put into their edits vs. simply playing with the features - not sure if that matters

MULTIMODAL DATA COLLECTION

WRITTEN NOTES ADDED MORE JOURNALLING AND REFLECTING CONSIDERING THE RESEARCH QUESTION

AUDIO PHOTOS REFLECTIONS

Collaboration

Tue:

Reflections:

How can an object influence the way a person feels?

In the fuzz FRENZY the tennis ball makes the prairie dogs feel... scared, confused, interested, mad, weird out, happy, excited, interested, amused, funny, silly, surprised, angry, frustrated, upset, intense, mad.

So important objects. Can an important object make you happy. Like if you think about it in a way, it really was important to the community. And we see that in a bully and Alvin... we see his change... the... all of the... not feelings when you... about the object take a... maybe think of it... some feelings. I can think... remember is from or was... how that because we've talked And she says my dad. It's called... I can't see and it's something that you hang by the by your door, and it's like a it's a certain kind of wood, and it stands there and you hang it by your...

lots of students wanted to share their ideas of important objects and how those objects make them feel - back to the idea of emotions - is empathy connected to important objects? If we see a photo of someone's important object, how does that make us feel about them?

Idea of a memory comes up - these objects make us remember an event that stirs the emotions

Bigger significance - that an object can change a community...

Again - how is this connected to empathy? Emotions? What other texts could be used?

Next step will be to reread and examine the characters a bit more closely - look for observations and inferences to help build on reading photos with a different context - will be interesting to see if it's easier for students...

Another building of background knowledge lesson...

ing:

Unpacking collaboration using audio from a group yesterday (Jack & Kaleb) is this collaboration? Worked to decide what it should look like, sound like and feel like. Added one point to each column before we started and again during consolidation

Empathy
Collaboration directly linked to empathy - how we treat each other and how we advocate for others

CML
Further exploration into making CML - students begin to use the same features - almost identifying themselves as artists - I can tell Jack's as he always adds images

Figure 12. Examples from my online journal of data collection and analysis.

Throughout the project, audio recordings were made to capture the classroom conversations that were happening in real time. These recordings were used as an additional source of information (see Figure 12) to add detailed narratives and descriptions to the photos and screenshots within my journal.

My physical notebook (see Figure 13) was a place to draw and design, capturing my thoughts and, often, my resonating questions. These ideas were frequently transferred to my online journal or included as a reference. The photos included in Figure 13 were taken from my physical notebook, and illustrate my thoughts as a teacher-learner and a teacher-researcher.

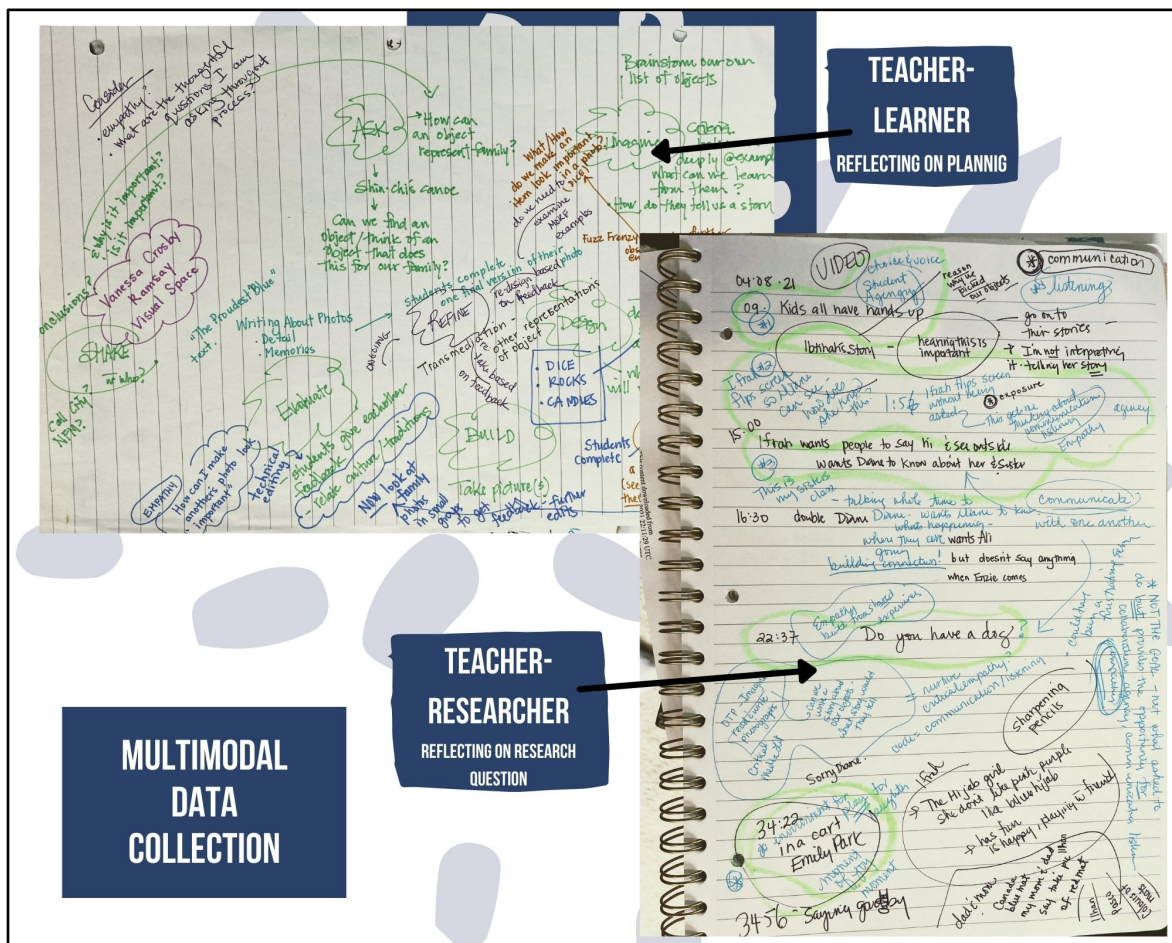


Figure 13. Example from my physical notebook of data collection and analysis.

Building a Plan for Data Analysis

As illustrated in Table 2, my method of analysis, based on Suchar's photo documentation framework, was an ongoing process which followed three steps within the DT process: Design, Build, and Evaluate. Building this plan allowed me to revisit moments that otherwise happened incredibly quickly in the classroom. Being able to review video footage and voice recordings to capture moments in real time helped to reveal what was happening in a moment that may have otherwise been taken for granted (Knowles & Sweetman, 2004). These captured moments are a feature of visual research, with the focus on a deeper analysis of everyday occurrences (Rose, 2014). These everyday occurrences allowed me to design lessons reflectively, based upon what was observed and recorded, noticing trends within my data, and thereby leading to the development of codes.

Rose (2014) also believes that because photo documentation is not tied to a structured framework, the potential is there to answer a wider range of research questions. She often references studies based on the exploration of urban environments, and believes that photography becomes evidence of "social positions and relations" (2014, p. 308) produced by that urban experience and environment. My research

examined social relations, specifically the CE nurtured within our classroom environment, rooted in experiences based in both DT and CML.

During weekly journal reflections, several patterns emerged. These ideas were used to write analytical notes in my journal related to my research question; these, in turn, influenced my shooting script or what I was looking for in the classroom (Suchar, 1997). With a constant lens of nurturing empathy (i.e., my research question), these notes – in combination with reviewing my photos and videos – helped me to identify a deeper conceptual understanding of how CE was being nurtured. Figure 14 illustrates how I started to notice specific competencies occurring during the same lessons. I used different colours to keep track of each competency and, as time passed, I could consolidate these codes into three themes.

Table 3 illustrates the competencies that I observed occurring together and the themes that I created to summarize my analysis. These themes will be further explored in the SHARE section.

I used different colours to circle and highlight codes that went together, thereby forming THEMES

shots of

Marking towards a common goal

collaboration

problem solving

expressions

new eyes make it look like never seen a dice before

This would have to be added in

48

Yakki jumping up and down excitement

Monday, March 22nd, Reworking the Piece

Collaboration between Jack and Nya

Design Thinking:

Problem solving: Groups were using the DSL sites as a reference tool to access help - also called upon the experts for features - i.e. - "we need help from the colour experts as we're stuck".

Collaboration: I saw students dividing the work, not working collaboratively

By combining modes of data, THEMES Emerged...

mp4

MP3

1:15 minutes

we actually shared more than just the ol

reflection makes it look like a dice

light from this window consequently in looks almost like sunset

table - location of object from edge

ombre effect - dark/lighter darker to lighter

they are pointing at it they are touching it

expressions

new eyes make it look like never seen a dice before

shots of

Marking towards a common goal

collaboration

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table - location of object from edge

ombre effect - dark/lighter darker to lighter

they are pointing at it they are touching it

expressions

new eyes make it look like never seen a dice before

Figure 14. An example of my data analysis, noticing codes occurring together.

Table 3

Codes Occurring During the Same Lessons and Their Associated Themes

Codes	Theme
Collaboration, Communication, & Problem Solving	Working Towards a Common Goal
Agency, Risk Taking, & Leadership	Building Experts Among Us
Feelings, Point of View, & Relationships	Understanding Us and Me

EVALUATE & REFINE

Evaluating My Analysis & Refining for Greater Clarity



Figure 15. A student evaluates our hallway display.

During the EVALUATE stage, designers examine and further analyze their data. As a teacher-researcher, this stage involved selecting specific moments to explore in greater detail, looking to understand how and if CE was nurtured. Moments were selected as I carefully combined multiple modes of data. I selected codes that I began to observe in multiple lessons (see Table 3). Closer examination of these codes produced the refinement of my data into themes, also mentioned in BUILD. This section will focus on the specific codes that came to light, and my themes will be discussed in greater detail within SHARE.

Taking a Closer Look at the Emergence of Codes

As a teacher-learner, I used the DT process to inform my instructional choices. My presentation of findings will also follow the DT process (i.e., ASK, IMAGINE, DESIGN, BUILD, EVALUATE, REFINE, and SHARE), highlighting observations chosen specifically to illustrate the codes that emerged within each phase. I noticed these codes occurring often and together, as I carefully combined modes of data (e.g., MP3 & MP4 files, photos, journal notes, sketches). I chose specific moments within the DT process to illustrate how these codes were occurring simultaneously, as outlined in Table 4 below. As this study was conducted over a six-month period, not all experiences or lessons could be included. Additionally,

because DT is not a linear process, these examples are not chronological.

Pseudonyms will be used throughout this section.

Table 4

Codes Occurring Together at Different Points in the DT Process

DESIGN THINKING PROCESS	FOCUS CODES
ASK	Collaboration & Communication
IMAGINE	Feelings, Points of View, & Relationships
DESIGN	Collaboration, Communication, & Problem Solving
BUILD	Agency, Risk-Taking, & Leadership
EVALUATE	Collaboration & Communication
REFINE	Feelings, Points of View, & Relationships
SHARE	Agency, Risk-Taking, & Leadership

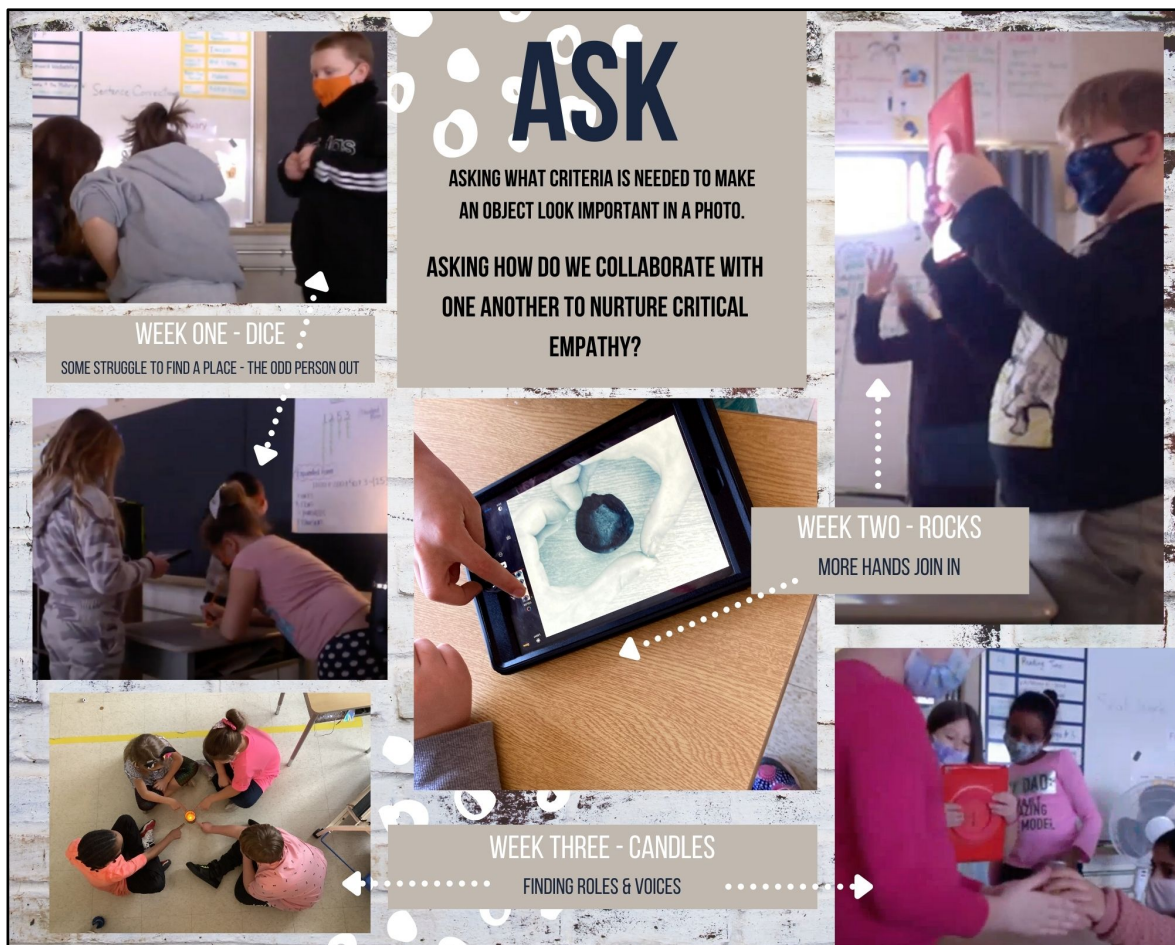


Figure 16. Collaboration within the ASK phase.

Asking: How Do We Collaborate & Communicate?

My findings for ASK were taken from a series of three CML lessons, in which students were asked to consider how they could make an object look important (see Figure 16). These lessons were spaced a week apart from each other so that I could work with students on areas of need, such as “how to collaborate” in between. Students knew that they were working towards photographing an important family object, and that developing criteria for these photos was a crucial step in the design

process. Students had already analyzed how objects could evoke feelings and represent a person's culture or traditions by interpreting fictional texts such as *Shin-Chi's Canoe* (Campbell, 2008) and *The Fuzz Frenzy* (Stevens, 2005). The three lessons were all structured in a comparable way: a challenge was introduced (e.g., how can we make an object look important?), students worked together to complete the challenge (e.g., taking photos on iPads) and finally, results were shared, discussed, and analyzed against developing criteria. Students worked to make a die, a rock, and a candle look important in their photos – one item each week, in that order.

These lessons took place early in the project, and as both a teacher-learner and teacher-researcher, collaboration and communication were the competencies that I noticed most often in my data. As I considered my research question, I realized that the way in which students worked together and communicated with one another was essential to nurturing CE. I also realized how crucial the DT process was in my learning. I was asking students to consider criteria for our CML work, but I was also asking them how we collaborate and communicate in order to understand, respect, and truly hear one another? – all these actions being essential to nurturing CE.

ASK – Collaboration

The dice photography challenge in our first week (see Figures 16 & 17) was the first-time students were allowed to work together in a group. Excitement and hesitation (due to COVID-19) were both evident among the children. A few groups seemed to move easily into the challenge, working together; however, most students struggled to communicate effectively with one another to arrive at a final photograph that was created and developed together. Often, one of the three students could be seen hanging outside of the action, unsure of how to join or add ideas. In most groups, this odd person out was often ignored as the other two worked towards the final photo (see Figures 16 & 17). I was unable to find in my data or observe any group who actively tried to include a member who might be off task or lost on the outskirts of the activity. Some students would express being left out to me as I travelled from group to group. Referring to our co-created fair/unfair anchor chart, I would remind students of agreed-upon behaviour and express the student's concerns. After walking away, video recordings show that the group often gave this person a turn (e.g., pass the iPad, ask their opinion) but again, I did not observe any group talking about their feelings or addressing the way that person felt.

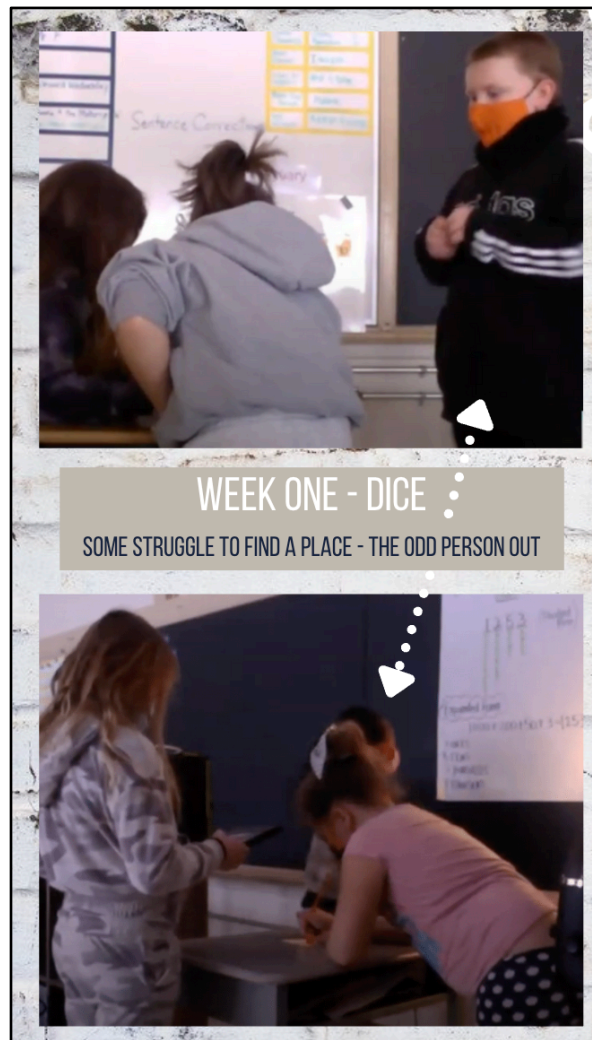


Figure 17. The odd person out in week one.

After reflecting upon this data, I knew that more targeted lessons would be needed to continue developing collaboration skills that nurtured CE. The week in between challenges allowed time to explore lessons focused on feelings, point of view, and relationships. Each day (in between challenges), we read found photos to make observations and inferences about what we started calling *what's behind the mask?*

(referring to emotions hidden underneath COVID-19 masks). These lessons allowed students time to reflect upon collaboration, while specifically addressing what I inferred from the observations was missing during the first challenge – being those elements that had prevented students from considering and advocating for each other.

During the second challenge in our second week about rocks, collaboration efforts improved (see Figures 16 & 18). Multiple groups were observed including each other in conversations about photos taken and editing choices. The following quotes were taken from multiple groups as they worked on this challenge.

“Should we use the sharp feature?”

“I tried blurring. I want to blur it.” [Group member reaches over to show which feature to use]

“How about this?” [Student holds iPad at an angle to maintain social distance but also share an edit]

Students helped one another, and worked to include each other in decision-making.

I still observed students who seemed removed from the group – standing back, speaking infrequently – but, however, for smaller periods of time. These students would jump in and out of the group work, participating when encouraged by group members who were engaging

in CE. The video recording revealed a group working to take a staged photo of a rock, with all members participating. One student took the lead, but each member gave instructions and directions while they passed the iPad back and forth. The student being photographed would return to review the shot, give her suggestions, and then go off to try again. For example, in Figure 18, Nya can be seen in the first week looking away from her group to the anchor chart on the bulletin board. She is seen again, in the second week, more engaged in the activity, helping her group take a staged photo of a rock. Nya's engagement, although influenced by multiple factors, seemed to improve with time and practice, and with the development of her classmates' collaboration skills, which were nurturing CE.

Again, I devoted time between this lesson and the next to discuss and reflect upon collaboration and the feelings behind our masks. Students completed reflection sheets (see Figure 19) which spoke to their excitement and happiness working in groups again. Some reflections did include group members disagreeing, or students writing about feeling unhappy at times due to being left out. Decision-making using the game rock, paper, scissors was a student-suggested solution to resolving disagreements which the class practised as a method for conflict resolution. The week also included



Figure 18. Nya's collaboration over time.

Pictures of Dice		Name: _____
Reflection How did groups make the dice look important in their photos?		
How did it feel to work with a group again?		

Figure 19. Student reflection sheet used between challenges.

reviewing anchor charts that were already co-created, such as whole body listening and what collaboration looks like, feels like, and sounds like.

During the challenge in week three with candles, students produced ideas and carried out their plans with seemingly less hesitation than previous weeks (see Figure 16). Students moved more freely within each group, still maintaining social distancing but in (what seemed to be) a less awkward and more natural way. Very few students seemed to be working outside of the group this week, and students could be seen shifting among tasks more seamlessly than during the past two lessons. Students were observed shifting the iPad between photographers and editing work with input from all members, reaching fingers in to add on or adjust. In addition, multiple students began adding their hands into the photos to show importance while others directed the poses. They began seeing their own hands, especially intertwined, as both important *and* as showing importance. Students made comments like:

“That’s good”

“No, try that!”

“That’s it!”

“Perfect!”

“Someone turn your hand like this!”

“Someone put your hands on top of mine!”

“Do you like it like that?”

Students talked more about whose turn it was and who still had not had an opportunity to use the iPad, considering each other's feelings and advocating for each other (reflecting the development of CE). After reviewing the video and audio clips and comparing them to those from our first week, these later conversations included more voices, describing with excitement the work before them.

Students worked through these three challenges, playing with photography and technology to tease out the criteria for making a photo look important. It became evident that students needed guidance to collaborate effectively, and that simply providing group activities was not enough to nurture CE alone. These opportunities to work together had to be consolidated and unpacked. We reflected upon what went well, what didn't go well, and how classmates felt. Spacing the lessons out provided time to dive more deeply into nurturing empathy. I was beginning to see that collaboration *could* nurture CE; however, reflective consolidation and further practice with a focus on each other within each team were required. I also began noticing that collaboration and communication seemed to be occurring together. This was how I began considering themes: by looking for codes that occurred together and how they were related (this will be described in SHARE).

ASK – Communication



Figure 20. Communication within the ASK phase.

It was also interesting to observe student communication, specifically during the lesson consolidation of each challenge. This was a time to reflect upon work: students presented the photos they had created, and peers commented and provided feedback (see Figure 20). Additionally, the criteria for making a photographed object look important was co-created, based on the ideas expressed during consolidation of the dice

photos. This criterion was then used to guide the remaining two challenges (e.g., rocks and candles). Figure 20 illustrates the progression of communication throughout the 3-week period.

I began the consolidation periods by asking very open questions such as, “tell us one thing that stands out to you about the way this photo was taken.” I wanted students to know that their voices and ideas were important, and that I did not hold a magical “correct” answer. By approaching consolidation in this manner, I saw students taking risks, adding their voice to the conversations. It was at this point where I wondered how agency contributed to the development of CE. I wondered if developing this competency would also be crucial in the nurturing of CE. If I wanted students to advocate for each other, I began seeing that they would first have to feel confident enough to speak their minds. Table 5 illustrates how the criteria for making a photo look important developed.

Table 5

Development of Criteria for Making a Photo Look Important

Student Communication (examples)	Criteria
<p>“I see our lights in the background”</p> <p>“I can see the girls and they are pointing at it”</p>	<p>What’s in the Frame?</p> <p>(Considering what else the viewer can see in the shot: foreground, middle ground, background)</p>
<p>“It looks cool, straight on”</p> <p>“It’s like above ground”</p>	<p>Point of View</p> <p>(Considering the camera angle of shot: from on top, straight on or below)</p>
<p>“We went to edit and used that filter”</p>	<p>Editing</p> <p>(Considering what editing tools to use on the iPad or Pixlr Editor)</p>
<p>“The light looks magical”</p> <p>“It’s an ombre effect – lighter to darker”</p> <p>“The light from the window makes it look like sunset”</p>	<p>Lighting</p> <p>(Considering where the light is coming from and how it affects the shot, as well as using additional lighting sources)</p>

<p>“I can see the shadow from the dice”</p> <p>“There’s a reflection”</p>	
<p>“Even though she’s wearing a mask, you can tell she’s smiling”</p> <p>“We added a paper and pencil”</p>	<p>Props</p> <p>(Considering what else is used to convey importance)</p>

What also stood out was the overall excitement around having an opportunity to get up in front of the class and present their photos. Students seemed proud of their work, and appeared eager to share what they had done with others. Students would remain at the front while classmates asked questions, described what they liked, and offered feedback. As the weeks progressed, more and more students offered opinions and comments, using the criteria as a form of feedback. Here are some examples from consolidation periods:

“She could change her point of view.”

“It looks good without edits.”

“They zoomed in so it’s concentrated, we can’t see lots of background stuff, it’s good.”

“They could put more hands in the shot to make it look important to everyone.”

Allowing students to lead these periods, stand at the front, and ask each other questions with little teacher intervention, allowed students to feel as though their voices mattered, and each week, confidence grew. Consolidation periods became lengthy, as more and more voices began sharing. I realized that this form of communication was yet another opportunity for students to learn about each other, practice active listening, and respond to one another instead of just to the teacher. Students considered each other's points of view, and while they sometimes agreed, they did not shy away from disagreement. These opportunities encouraged students to take risks, allowing for leadership and student agency within learning. I began observing these codes (e.g., agency, risk taking, and leadership) within the same lessons. As I observed students engaging in communication which included discourse, I could see the connection to CE more clearly. Having authentic opportunities to advocate for one another and challenge one another seemed to be nurturing CE by providing opportunities to explore the ways we were communicating. As described in BUILD, these new understandings and questions continued to drive the data collection and analysis process.

Imagining Point of View, Feelings, & Relationships



- Figure 21. Point of view, feelings, and relationships within the IMAGINE phase.

The findings for IMAGINE were taken from a virtual small group lesson (6 students). At this point in the project, students had finished editing each other's photos and had created multiple representations of their objects including drawings, stories, and poems. These representations had also been shared within the group, each sharing involved, collaborative feedback and consolidation. These experiences seemed to

have built a greater understanding not only of each other's objects, but of *each other*, as well. Figure 21 illustrates how students seemed to imagine point of view, feelings, and relationships during this virtual lesson.

For this lesson, I wanted students to IMAGINE a situation that had previously occurred at our school, involving profanities yelled at students who were wearing hijabs. One of our students (who was in the small group) had chosen the hijab as her important family object, creating a connection to this story and our overarching question: *why should we respect the diverse cultures and traditions within our community?* Additionally, we had read and analyzed *The Proudest Blue*, a fictional story about a young girl's first day of hijab, providing further connections to the actual account of discrimination. I wanted students to imagine the fictional account (i.e., *Proudest Blue*), the actual account (i.e., girls walking home from our school) and the possibility of discrimination happening to our classmate. I wanted students to imagine all this in addition to their own voice within each situation to observe and reflect upon their ability to critically empathize.

I began the lesson by briefly describing a factual account of students walking home from our school and having a car pull up beside them, roll down the windows, and yell profanities at them regarding their hijabs and faith. The girls involved had confided in me, explaining that

their uncle would be picking them up from school to avoid such situations for the time being. After retelling this story, I asked my students a series of predetermined open questions, allowing students to express their thoughts regarding this event.



Figure 22. Boyd showing surprised and concerned expression, and getting close to examine Aisha's photo.

Mrs. ML: Does this surprise you?

"YES!"

"A LOT!"

"What surprised me was that it was at our school. Were the kids yelling from our school?"

"I'm surprised people would do that."

"A lot, a lot! Do you know what they said?"

The responses to this question came very quickly from all six students. They were all surprised that something like this could happen (see Figure 22), especially near our school. The questions and comments led to my second question.

Mrs. ML: “Why do you think people would do that to the girls?”

“I think they never experienced how it feels like to wear a hijab”

“I don’t know why people would do that; it surprises me an extra a lot.”

“I think no one tried wearing a hijab so they thought it wasn’t cool so then they started bullying the other person because they didn’t like it.”

“Probably a bully at another school... they... Probably cause someone in their family treated them like that when they were a baby.”

“Probably because when they went to school, they wore something, and some people didn’t like it, so they got mad and did that to other people.”

This question was more difficult for students to answer at first, but with the wait time provided, they were able to infer that both a lack of experience with the hijab in addition to being treated poorly themselves may have motivated the insults. They were able to consider both the point of view of

the girls and the people who were mean to them. My third question urged students to consider this situation from a more personal manner, by drawing a connection to our classmate, her photo, and drawings.

Mrs. ML: “Here is our classmate’s final photo and the words she used to describe her hijab. Do you think something like this could happen to her when she starts wearing a hijab? How does that make you feel? (see Figure 23)

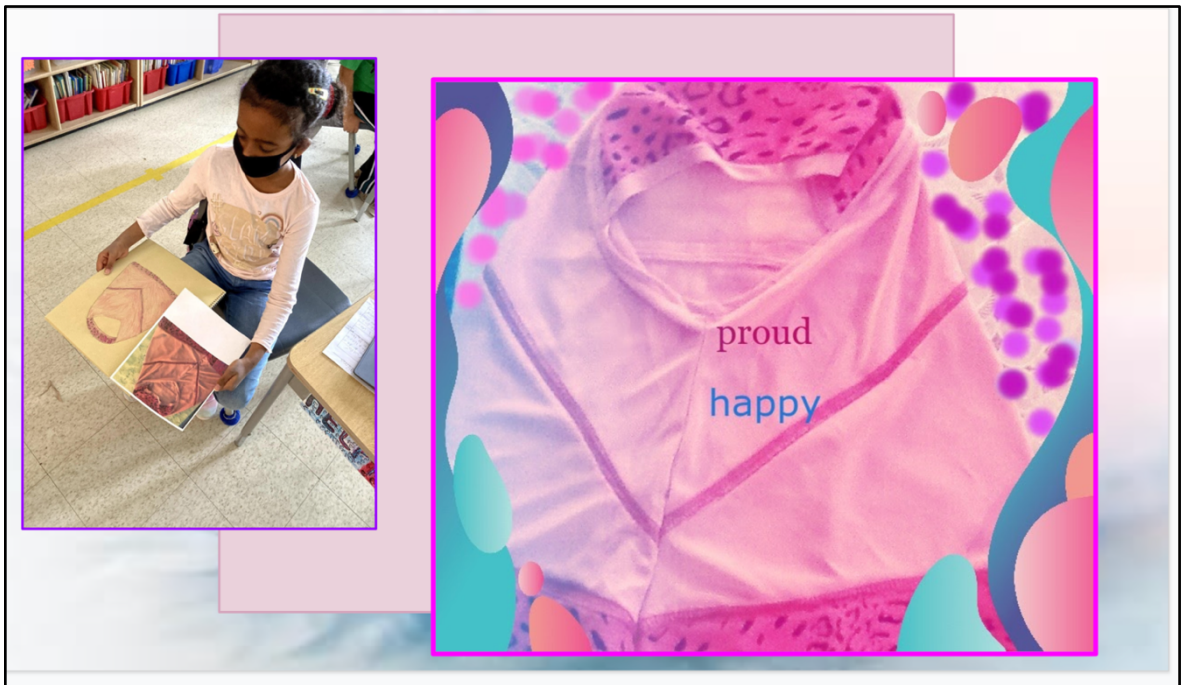


Figure 23. Slide presented to students showing Aisha at her desk and her final photo.

“Yes. SAD!”

“Yes. NOT good.”

“Well, I think it could happen to her because those other girls got bullied walking home and when I go on the bus, I see her walking

home and of course lots of cars go by, so I feel like it will happen to her. It makes me really sad because then maybe she won't want to walk home anymore."

There was a considerable pause after asking this question. I did not repeat my question, and instead waited, and after a period of silence, students began expressing their thoughts. I think it was more difficult for them to imagine this scenario, as it made the situation very real. Students had all spent time editing the classmate's hijab photo, talking, and thinking about it, in addition to hearing the classmate's poetry describing her own feelings towards it (see Figure 24). Their responses indicated their ability to imagine her point of view in a similar situation. My final questions continued to motivate or deepen students' thinking, as I asked them to imagine what they might do if they witnessed this happening to our classmate and if our conversation was at all helpful.

Mrs. ML: "If this happened to her at our school, and you were there, like the students in *The Proudest Blue*, what would you do?"

"I would say, don't bully her because of her hijab, it's what she wears, and it's really mean to laugh at her."

"I would say stop, I know it's not the normal clothes you see but it doesn't mean you have to disrespect it."

Mrs. ML: “Is this conversation helpful?”

“We wear hijab. It is part of our culture but not their culture, so they just don’t know.” (see Figure 24)

“Yea, so we don’t bully people, but we never would. In the book they thought it was a tablecloth but it’s not. It’s the clothes traditional people wear.”



Figure 24. Aisha holding up her actual hijab for students to see.

Throughout our conversation, students were able to consider another point of view while expressing their feelings towards an unjust

situation. Having the opportunity to make real connections between fiction and reality allowed students to not only understand that these unjust situations occur, but also that they occur in our own community. Additionally, students were able to consider how they would react, considering their own role in issues of social justice (again, developing elements of CE).

The data gathered from this experience illustrates the use of several codes, including feelings, point of view, and relationships. These codes had emerged earlier on in the research process, but it was this lesson in particular where I could begin to see the connection between codes and their importance in nurturing CE, leading to one of my three themes: Understanding US and ME (see Table 4 in BUILD and further exploration in SHARE). I began wondering about the difference between nurturing empathy and CE. It was clear that students could empathize with both the victims and those who were verbally attacking them. What was more difficult to gauge, however, was their ability to critically empathize. When asked what they would do, they all expressed that they would stand up for Aisha; however, is that because they thought it was the right thing to say? I began realizing just how complex nurturing CE was, and that it included developing multiple competencies together.

Designing Collaboration, Communication, & Problem Solving



Figure 25. Collaboration, communication, and problem solving within the DESIGN phase.

Within the DESIGN stage, students worked to create a plan to edit a peer's photo to make it look important (representing CML). Additionally, these experiences allowed students to DESIGN collaboration, communication, and problem-solving techniques. Each day, students worked to design two peer photos; therefore, these shots represent

different days throughout the process. For this section, I will refer to each specific photograph within the DESIGN collage (see Figure 25). My data for design comes from five photos taken by me during in-person learning, in addition to my journal, audio, and video recordings.

As a teacher-researcher, I chose photos for DESIGN that stood out to me during my analysis in relation to my developing codes. These photos extended my understanding of collaboration and communication, bringing to light problem solving within and between the two. As I sifted through data, I began to see that students were designing their own methods, and using the methods discussed and shared in class to solve problems, thus enabling greater collaboration and communication while nurturing CE. These three codes appeared simultaneously in my data (as illustrated in these five photos), and thus were grouped together to create the theme of *working towards a common goal* (see Table 3 in BUILD and further exploration in SHARE).

Photo #1



Figure 26. Girls designing communication and collaboration strategies.

Photo #1 (see Figure 26) shows two girls working together to edit a photo. The girls were partnered together multiple times during this process. One girl spoke very little English, having been in Canada for less than a year. The other girl wore a cochlear implant and understood very few spoken or written words. As time passed, this pair began designing their own cues and signals to solve the problem of communication. As one girl would adjust the editing features, she would stop and look for confirmation in the form of a thumbs up or down from her partner. The girl

who spoke little English began speaking more often, slowly, and patiently for her partner, and later, their communication expanded to include verbal agreements in addition to signals.

Through the collaboration, a friendship seemed to develop, and the girls extended their communication to the playground at recess. Both girls were observed advocating for each other if a game began and one was left out. When it was time to line up, one would save a spot for the other, motioning with hand signals and slow deliberate words for the other to join. In Figure 26, a coloured egg can be seen on the computer, a gift which one girl had made for the other. These girls were not only designing photos: they seemed to be designing their own form of collaboration to solve their problem of communication. Additionally, they appeared to enhance their ability to empathize with one another. Both girls would often call me over to advocate for the other:

Savana points at Aida and screen [showing she needs help logging on]

“Bathroom – Savanna” [Aida telling me that Savana needs a break]

I observed them both waiting and considering what the other needed throughout their work together. The more time they had together, the more they seemed to be able to communicate with one another to collaborate on the task at hand. The more time they spent together, the

more they could also be observed advocating for one another, building not only collaboration and communication skills, but seemingly, friendship skills as well.

Photo #2



Figure 27. Designing problem-solving skills to continue collaboration.

Photo #2 (see Figure 27) depicts two boys, Jack, and Kaleb, using the game rock, paper, scissors during collaboration on a peer's photo to make an editing decision. On this day, communication had broken down; Kaleb looked out the window and refused to talk with Jack, who was suggesting a specific edit. As I watched, I observed Jack switch his

approach and suggest rock, paper, scissors to make the decision. They continued working together, appeared to hold no grudges, and used this strategy often to decide on further edits that day.

Kaleb and Jack were often paired, as they struggled to communicate effectively. Although some teachers may have seen this and separated the boys, I kept them together and simply referred them to mini lessons we had held regarding communication and problem-solving strategies during collaboration. By allowing these students the opportunity to work through tricky situations, they seemed to learn more about one another, utilizing strategies to continue communication and collaboration. These boys appeared to be designing solutions to their collaboration problems in addition to the photos. Regardless of Jack's motivation to get his partner back on track, he had to consider the situation carefully and use a strategy to engage Kaleb back into the work. He appeared to consider Kaleb's point of view (i.e., not having a turn), and reacted in a way to resolve the situation quickly and peacefully (i.e., initiating rock, paper, scissors), thereby nurturing CE in the process.

Photo #3



Figure 28. Designing socially distanced collaboration.

Figure 28 was taken the day after a COVID-19 outbreak was declared at our school, moving an entire cohort into isolation. The local health department was visiting, and all teachers were told to strictly enforce social distancing, minimizing group work that might encourage close quarters. I asked most students to work independently on editing their peers' photos, and only allowed two groups – one of which you can see at the front of the room in Figure 28 – spaced out and using the SMART Board. What was incredibly interesting on this day was the collaboration

that occurred across rows. In Figure 28, you can see one girl looking over to another's device as they discussed a plan for editing the photo. They agreed on a peer's photo to edit, and worked through changes together, each on their own device, calling out specific edits to each other as they progressed. These girls designed their own method for collaboration, in addition to designing photos. They sought out each other's point of view despite the inability to be physically close to one another, continuing to work together towards a common goal while nurturing collaboration, communication, and problem solving.

Photo #4



Figure 29. Designing socially distanced collaboration.

Photo #4 (see Figure 29) was taken on the same day as Photo #3 (see Figure 28), right after the COVID-19 outbreak within our school. Students were spaced out and provided with a large screen for easier socially distanced collaboration. These three students worked together, communicating to devise a plan for their peer's photo. They created a plan to go through each editing feature together, and then worked to adjust that feature collaboratively.

Group comments included:

"Do a 9 there."

"Like this?"

"Yes, that's good."

"Ok, skip that one."

"Let's go to colour."

"Should we try green?"

"YES!"

"Let's save it."

"Save over there, in the bottom."

"Let's do Boyd's now"

"He likes to play games with his family."

"Let's put play on it."

The group worked well together, allowing each member to share their

thoughts while considering each other's opinions as choices were made. They considered not only each other, but also the student they were editing the photo for, considering what the photo illustrated and how that related to his enjoyment playing games with his family. They made decisions based on all these considerations, advocating not only for their own choices, but for the student whose photo they were working on. This group designed photos, in addition to designing ways to collaborate and communicate with one another despite new social-distancing rules and regulations.

Photo #5



Figure 30. Designing problem-solving strategies to continue collaboration.

In Photo #5 (see Figure 30), three group members – Cara, Nya, and Melody – worked to design a plan and make edits to a photo. The girls positioned both themselves and the computer so that all three would be able to observe and manipulate the device. This group included one member, Nya, who consistently struggled to contribute, often steering conversation off task or even removing herself physically from the group to dance or jump about (see Figures 16-18). On this occasion, Nya and Melody began talking about recess and plans for playing later in the day. After listening to the audio track, I felt as though Cara was getting frustrated with the off-task conversation. Cara attempted to get the girls' attention back to collaborative editing:

“Guys...”

“Guys, what about this picture?”

“Guys! Chicken Monkey!”

Cara used a class co-created strategy that we called “chicken monkey.” If a group member was not listening, or someone felt their voice was not being heard, “chicken monkey” acted as a code word for the group to stop and talk about what was happening. Although the three certainly got distracted, using the code word did bring everyone's attention back to the job at hand to continue moving the project forward, further designing their solutions for collaboration. Similar, to Jack

in Photo #2 (see Figure 27), Cara's motivation to use "chicken monkey" seemed to demonstrate her desire to problem solve to further collaboration. Nya and Melody stopped talking about recess when the code word was used, which suggests their ability to understand Cara's point of view and frustration.

Building Leadership, Taking Risks, & Allowing Student Agency



Figure 31. Student agency, risk taking, and leadership within the BUILD phase.

My findings for BUILD (see Figure 31) are based on data collected from a lesson where we worked to become experts on one feature within the photo-editing tool Pixlr. The students and I started by thinking about what we were experts at, and students came up with answers including math, coding, and jumping on a trampoline. I explained that they would each work with a partner to become an expert on one feature of the program, and then partners would teach that feature to the rest of the class. We discussed how this would be helpful because the program was complex and not designed for students in Grades 2 and 3; rather, it was designed for adults. I told students that I knew they were more than capable of becoming Pixlr experts and that together, we could share our knowledge with each other to make editing photos easier. As I integrated technology into many of my lessons, I felt confident that students would excel; additionally, they had already shown knowledge of photo editing using the iPads. However, the lesson would certainly challenge students as they would need to recognize specific files, and download, upload, save, and edit files – all tasks that they had little experience in. Students would potentially build their technical skills (reflective of CML), and additionally have the opportunity to build student agency, leadership, and their ability to take risks.

In preparation for the lesson, I had made a series of slides (see Figure 32) with screenshots for students to access, if necessary. I gave brief instructions, referred them to the reference slides on our class website, and allowed them to begin. This quick release enabled students to own their learning, working together with their partner to solve problems when they arose. As I observed, if students were stuck, I would refer them to the reference slides and quickly move on – again, allowing student agency and leadership to drive the lesson rather than my knowledge or intervention.

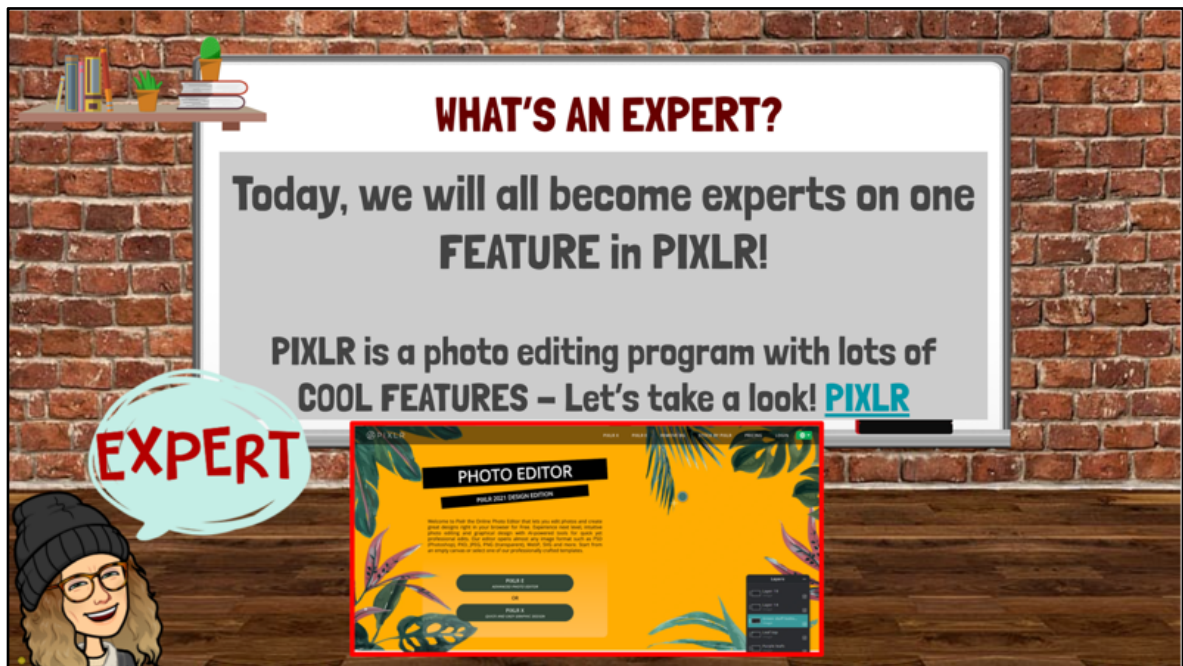


Figure 32. The first of a series of reference slides posted on my class website.

After reviewing video footage, I noticed a group of two girls in Grade 2 working their way through the project (see Figure 33). They moved between program tabs with ease, exploring their assigned feature and eventually, saved an edited copy before uploading it back to the original folder. The girls were not able to read many of the words within the program, but were still able to navigate and complete the task. Between giggles, I observed each girl practising manipulating the feature they were assigned, using their hands and fingers to explain and direct each other to places within the program they needed to go. As one would slide a light scale up or down, the other would comment on the effect and her opinion of the result. When in doubt, the girls would access the class website and talk through the images that I had created for them regarding specific steps. Before long, I observed that the girls had completed the task. Using play and experimentation, the girls were ready to teach others about their feature.



Figure 33. Two girls independently navigate a photo-editing program.

Before asking for experts to share, each group had to save their edits and upload new files into a shared folder. A few groups asked me for help, but again, I refrained from intervening. Instead, I asked for peers who felt they were “experts” to circulate and help the remaining groups upload their files. Removing myself was key to building their confidence and overall understanding of this complex editing tool.

Partners came to the front and shared their understanding by teaching us about their feature (see Figure 34). I removed myself from the

front altogether, and allowed students to take control of the “teacher” computer. With confidence and pride, students presented their features while classmates listened attentively. Presented ideas and corresponding comments/questions included:

“So, there’s a bunch of stuff to pick from in here, like this one.”

[Student used hands to show the feature on the SMART Board while his partner adjusted the transparency level]

“Like transparency – do transparency – it’s how much you can see.”

[Student listening asked a relevant question]

“How do you scroll down if you decided to get rid of them [edits]?”

“Whatever you put on [onto the screen] it shows you right here – then you press back [shows by pointing] and it gets rid of it.”

Overall, I was impressed with students’ collective ability to open, upload, download, edit, and share these files. By stepping back, and allowing students to take the lead, they rose to the task. Students built an understanding of how photos could be manipulated (highlighting their development of CML), but also seemed to build confidence in their own abilities as experts.



Figure 34. Students lead the lesson consolidation period, teaching others about their assigned feature.

Upon reflection and analysis of this data that the codes of agency, risk taking, and leadership again could be seen as occurring simultaneously. I had observed all codes in previous data, and was already considering them in my lesson creation and analysis, but during this experience, their significance continued to crystallize. I began to see that when students were given a challenging task with little assistance, they rose to that challenge. Students were observed taking risks during

these self-directed learning opportunities. They seemed to be learning about each other through not only the collaborative task, but also through the content they were working with. Having greater ownership over their learning allowed them to see and show their strengths, being seemingly excited to help and advocate for others as they walked between groups and assisted. My third theme, building experts among us (further explored in SHARE), began to resonate with me, and form as a potential theme as I continued to explore how CE could be nurtured.

Evaluating Collaboration, Communication, & Critical Empathy



Figure 35. Evaluating collaboration, communication, and critical empathy.

My findings for EVALUATE were based upon data collected from a lesson looking specifically at evaluating both editing choices (related to CML skills) and collaboration (see Figure 35). I began the lesson by playing an audio track from the day before, where students could hear a group arguing, having a difficult time getting along, and ultimately not completing their work. I asked students to consider what collaboration

looked like, sounded like, and felt like. We started an anchor chart together using these headings (see Figure 36). In addition, I showed students photos from multiple groups the day before (see Figure 37) and had them evaluate using observations and inferences if what they saw was reflective of collaboration. The task for the day was to continue editing photos with their partner, considering collaboration as they worked. The students who took photos were given a chance to describe them and talk about why they were chosen and their importance to their families.

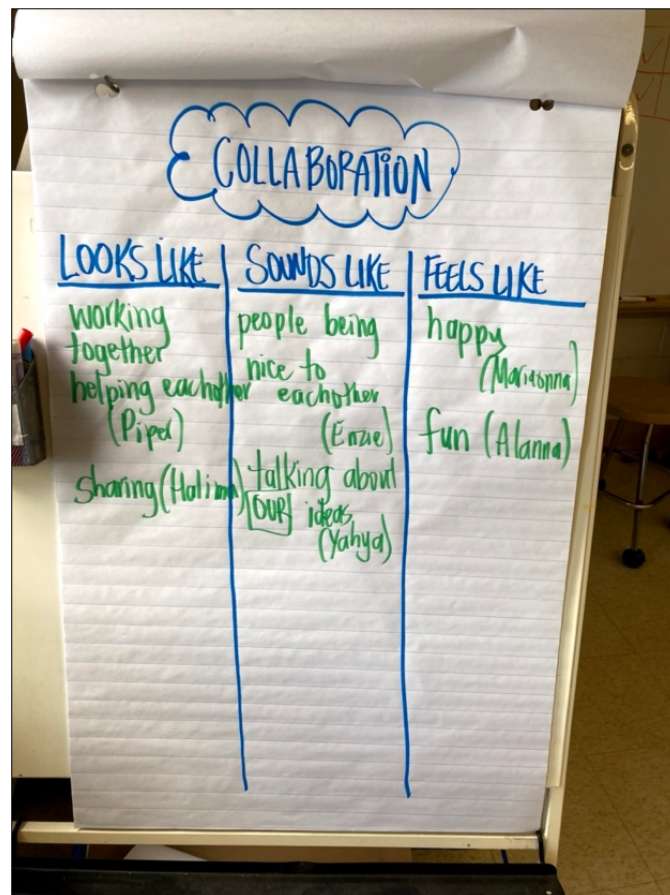


Figure 36. Students share ideas about collaboration.

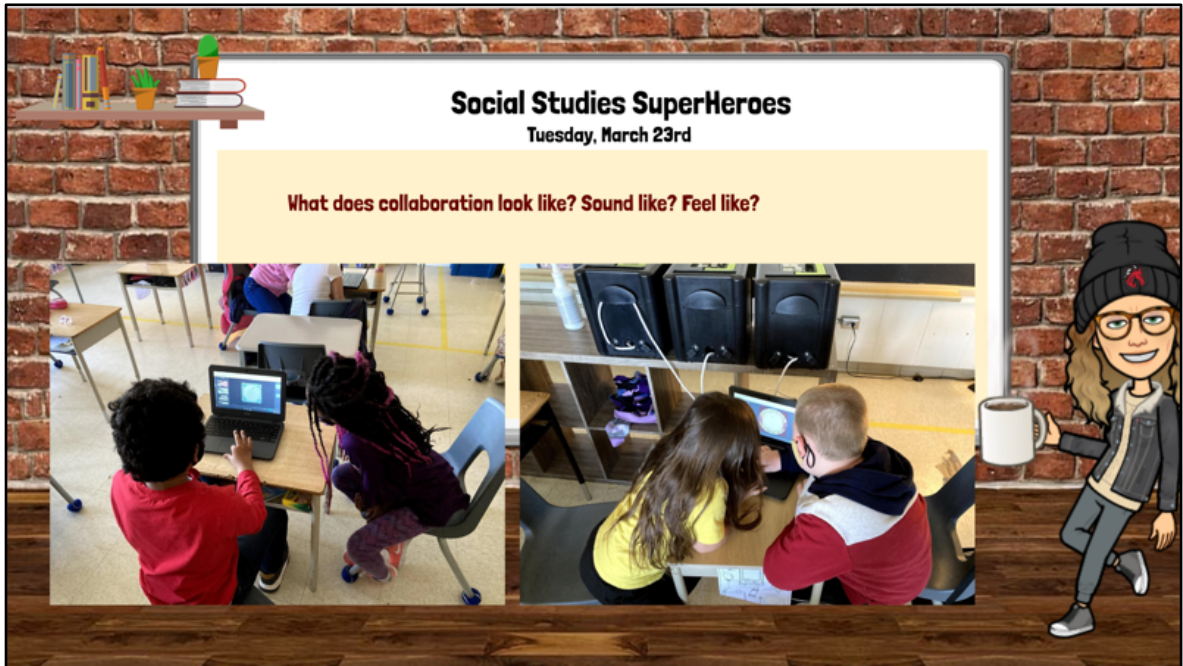


Figure 37. Slide shown to students with pictures from the day before.

Aaban described his important object to the group that day. He had chosen the Koran. Figure 38 shows Aaban approaching the front of the room as I opened the picture of his important object onto the board. Aaban told us:

"This is a special Arabic book. It's about 25 people. God made it. We call them the prophets. All of them are important. Mohamed was in a cave and an angel told him to read but he couldn't read Arabic because he didn't go to school."

Aaban continued to share more about the Koran, and then students began their task.

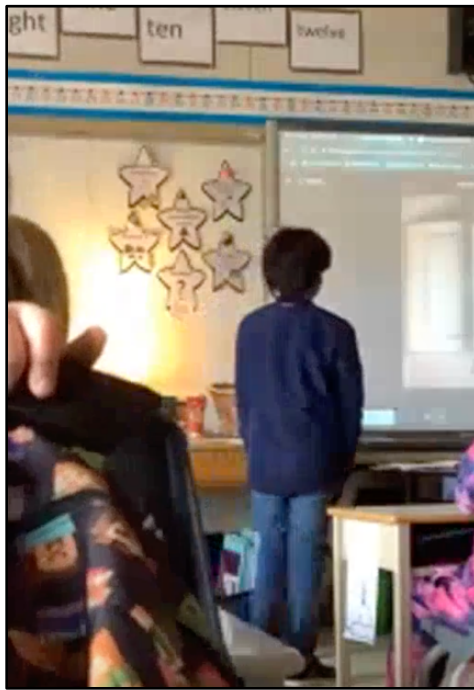


Figure 38. Aaban describing his important family object.

The collage images (see Figure 35) in this section are video screenshots that were taken from an iPad with Dr. Collier on video, live, joining us through Microsoft Teams. On days when Dr. Collier would join us, a group would be chosen to “babysit” her. On this day, I chose the group who had been arguing the day before to watch Dr. Collier. Although my intention was to evaluate their ability to collaborate, so much more unfolded as this group began their work.

As the whole group discussion on collaboration was taking place, Dr. Collier’s “baby-sitter,” Jack, ensured that she was both able to see and hear what was happening. He shushed her, seemingly wanting to make

sure she was being respectful of the class and what was happening in the room. When his classmate, Aaban, presented his family object photo, Jack explained to Dr. Collier what was being said, without being asked – again, it would seem, showing his concern for Dr. Collier. He appeared to want to help her understand what was happening and be a part of our group. Jack told her:

“It’s Aaban’s book – it’s in his language.”

“This is his book when it’s closed.”

Figure 35 illustrates moments between Jack and his partner Kaleb once work had begun. The boys had been partners during multiple sessions in the past, and had struggled to collaborate. Jack watched as Kaleb tried to log on, struggling with his username. Without being asked, Jack started spelling the username for Kaleb. Jack held the iPad with Dr. Collier on it, and explained to her each step that Kaleb took. Jack took this role on his own, seemingly wanting to make sure Dr. Collier was experiencing what was happening. He said:

“He’s doing light now – it’s in elements, he’s turning up the brightness.”

“Diane, do you like it?”

The bottom left screenshot (see Figure 35) illustrates one of Kaleb’s editing choices. He had added light swirls onto the Koran with black dots

in the centre on the light swirls. Jack reminded Kaleb and Dr. Collier that they needed to make the item look important. Kaleb seemed excited about his edits, and talked about the light effect and how the black dots looked like bullets. Jack seemed unsure of this addition, stating:

“But it looks like someone shot a gun through it!”

At that moment, as I was circulating between groups, I stopped to see what the boys were doing. Although I was taken aback by the appearance of bullet holes, I calmly asked the boys if they liked it this way, and if they thought it was highlighting the object's importance for their classmate. Jack and Kaleb reflected upon this:

Jack: “The only thing I don't like is the black dots.”

Kaleb: “I can take them out.”

The boys took them out and continued working. Jack suggested using the clock to determine when it was time to switch who was controlling the device. Timing was a new suggestion for solving collaboration issues, and Kaleb agreed. Once it was Jack's turn, he ensured that Dr. Collier was passed to Kaleb, and that she could still see and hear what was happening. Kaleb was quick to argue about switching chairs so, again, Jack came up with a solution. Once Jack was in control, he continued to speak actions out loud so that Dr. Collier could hear what was happening.

Jack: “First thing I want to do is add text – I want to add writing.”

[Jack added the words “Cool Book” (see Figure 35)]

Kaleb: “Why did you do that?”

Jack: “Because it IS a cool book.”

Although my intent was to have students evaluate and refine their understanding of collaboration during the work on this day, so much more occurred in this group. Jack seemed to take his role of “baby-sitter” very seriously. At multiple points, Jack stopped work to ensure Dr. Collier was able to see, hear, and understand. Jack spoke up, asking Dr. Collier to be quiet at a moment of classroom instruction. His actions implied concern and empathy for Dr. Collier and our class.

After multiple chances to work with Kaleb, Jack’s ability to both communicate and collaborate with him seemed to have improved. Regardless of motivation, Jack was able to suggest and carry out solutions when problems occurred, avoiding verbal arguments that had occurred between them in previous attempts to work together. Instead of showing frustration with Kaleb, as he had in the past, Jack spelled out Kaleb’s username when Kaleb could not remember it. Jack suggested the solution of timing one another to make turns fair, and remained respectful even though it became clear that Kaleb couldn’t tell time. Jack’s ability to empathize with Kaleb seemed to grow with each opportunity to work together, requiring communication, collaboration, and problem solving.

It also seemed apparent that Jack was considering Aaban's point of view, and was advocating for specific choices to ensure Aaban's photo looked important. He described Aaban's item to Diane and reminded the group that their purpose was to enhance Aaban's item, making it look important. He did not like the idea of bullet holes on the Koran and instead chose the words "Cool Book." These actions imply his ability to engage in CE. Jack seemed to understand the importance of the Koran to Aaban, and advocated for the photo to reflect this.

The data collected during this experience allowed me to consider not only the codes of collaboration, problem solving, and communication, but more importantly, their direct link to CE. My findings provided me with another example of the codes occurring together, working with one another to complete a goal or task. I also began thinking about how interwoven all my codes were. I observed leadership, agency, risk taking, as well as point of view, relationships, and feelings all within this one lesson. I began to see that these competencies were all relevant in the nurturing of CE.

Refining our Work, Relationships, & Understandings



Figure 39. Students refined work, relationships, and understandings.

Designers return to REFINE multiple times throughout their projects. This stage is revisited often when the need arises to refine or adjust thinking. The data I chose to analyze for my findings within this section came from a lesson designed to refine student thinking regarding their own work (see Figure 39), but also refine their thinking in relation to one another.



Figure 40. Students seated with partners for sharing.

Students created multimodal representations of their special object photos (e.g., drawings, poems, and stories) to further illustrate the item's importance to them. After students drew their special objects, they added words, thoughts, memories, and feelings related to the objects around them on their page (modelled with *The Proudest Blue*). On this particular day, students had an opportunity to refine their work by meeting with a partner (see Figure 40) to share their words and phrases and receive feedback. In addition, students could add new words and phrases from their partners' work to their own drawing if they saw

similarities between their objects and their partner's. Students had 5 minutes with each partner before rotating to a new peer to repeat this revision process.

As students began sharing, I observed that they also seemed to be refining their collaboration skills. Once seated, I heard multiple partners begin by asking who should go first. If a decision couldn't be made, students used their strategies such as playing rock, paper, scissors to quickly decide and move on with sharing. After a brief period, between 5 to 10 minutes, I asked partners to switch so that students had multiple opportunities to share and learn about their classmates. Students appeared to be engaged and eager to share both their drawings and words with their peers. I also observed the refinement of communication. Multiple students asked their partners questions to learn more or to clarify their thinking, rather than simply take part in an exchange of words.

Arianna: "Do you think I should add anything?" (see Figure 41)

Jack: "Why does it say 'sad'?"

Arianna: "Cause my dad shoots it and the deer dies so it kind of makes me sad."

Jack: "Will you kill a deer?"

Arianna: "Yeah, when I'm 8 and I'm almost 8."

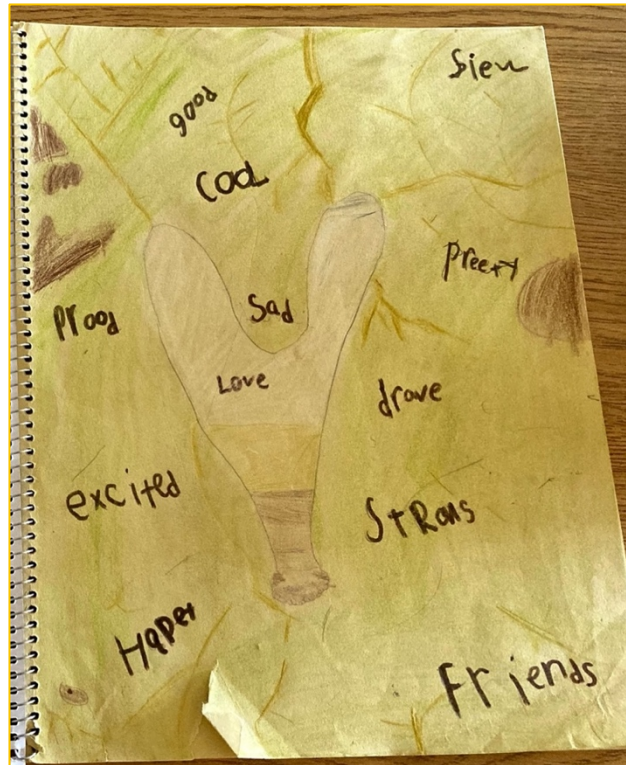


Figure 41. Arianna's drawing with thoughts, memories, and feelings.

This exchange allowed Jack the opportunity to learn more about Arianna's tradition. Jack expressed confusion, and Arianna explained.

Once students had met with multiple partners, we returned to the classroom to consolidate our learning. I asked students if they had been with any partners who had inspired them to add meaningful words to their drawings: words that they heard about their partner's object that also related to theirs. Most students raised their hands with examples to share:

"I added 'family' from Willow's and 'fun' from Yusuf's."

"I added 'strong' from Melody's and 'joyful' from Darcie's."

“I was with Boyd, and I added ‘meaningful.’”

“I added ‘pretty’ from Aisha because my object is pretty like hers!”

Comments seemed to indicate that multiple students found similarities between their object and those from others. I then asked if anyone could tell me about one of their partners’ objects and why it was important to them.

“Arianna’s object is deer antlers and it’s important because her and her dad hunt together.”

“Vince’s object [hockey sticks] is important because it’s something him and his dad do together. Watch and play.”

“Kya’s jewelry is important because it gets handed down, like to all the girls. They’re born in September and her grandma’s mom started it.”

“Jack’s plate is important because it gets handed down to younger and younger [people [like Kya’s family.”

Comments implied that students understood classmates’ objects and their importance.

Lastly, I returned to our overarching question: why should we respect the diverse cultures and traditions within our community? I asked students if our objects were somehow connected to this big question.

“Yeah, they do [connect]. If you don't know them well, or they've never seen something like these objects then they don't understand.”

“My pictures and words help [people] understand it – culture and traditions more.”

“You don't want an issue [if there is no respect] the more we know and see the more we won't have issues.”

Ultimately, student responses seemed to indicate that knowing more about a culture or tradition helps build understanding and respect.

This example of REFINE was incredibly important for me. Students had been working on the project for 3 months at this point, and the activity allowed them to refine multiple aspects of their work and thinking. Time was permitted to share with one another, allowing for feedback and the opportunity to learn about and from one another. Consolidation time was also allowed, so that students could voice their new ideas, illustrating the similarities between themselves and their peers. Additionally, referring to the overarching question expanded students' thinking beyond the classroom to issues of social justice.

In the events and examples described above, students were refining communication by engaging in conversations that allowed them to see similarities between themselves. Those similarities, seemingly,

created a connection between students who could use the same memories and feeling to explain their objects: objects that told of each student's culture or traditions that, before we began, were mostly unknown to the group at large. I felt as though we were refining so much more than our work. As a group, we were refining our understanding of each other – an action which students themselves began to see as necessary to avoid conflict, hurt feelings, and misunderstandings between people.

Sharing our Understandings with Others: Agency, Risk Taking, & Leadership

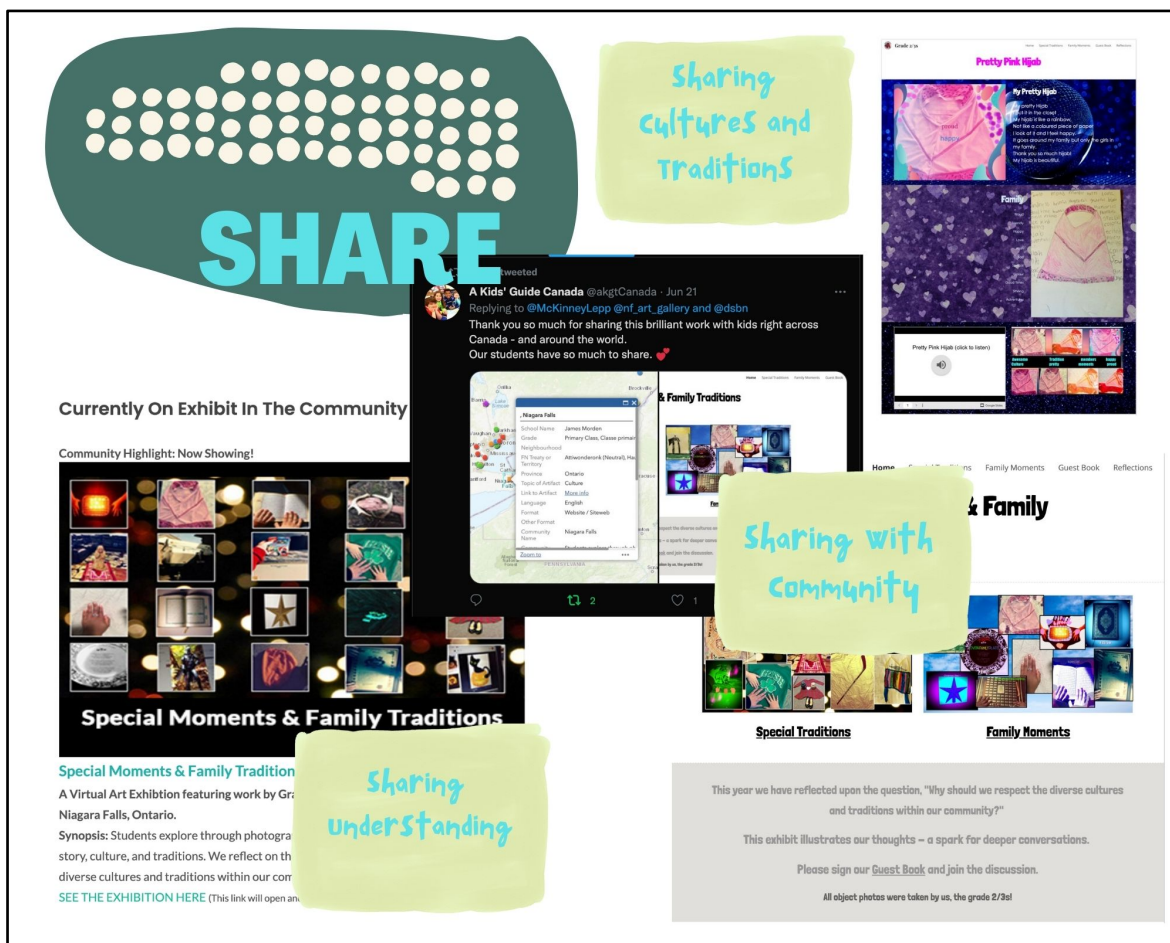


Figure 42. Students created a website to share their work and understandings.

During SHARE, designers allow others to interact with and experience their work. The data analyzed and used to illustrate findings for SHARE comes from our culminating project, a class website (see Figures 42 & 43) which illustrated each student's special object on their own webpage. One of the project goals was to share it with our local art gallery, where it would be an exhibit within the art gallery's community space.

The website (see Figure 43) was created in June, while students were online, making the task challenging. Wanting to allow as much student agency as possible, I designed interactive slides, surveys, and boards to capture student voice and choice. Students collaborated on the titles, layout, and formatting of each page -- especially their own -- with feedback and advice from the group. Time was spent in breakout rooms (via Microsoft Teams), allowing students to share ideas and suggestions with one another. Although students were preparing to share this work with the community, the process allowed them to share even



Figure 43. Homepage of our class website.

more deeply with one another, seemingly learning deeply about each other's cultures and traditions.

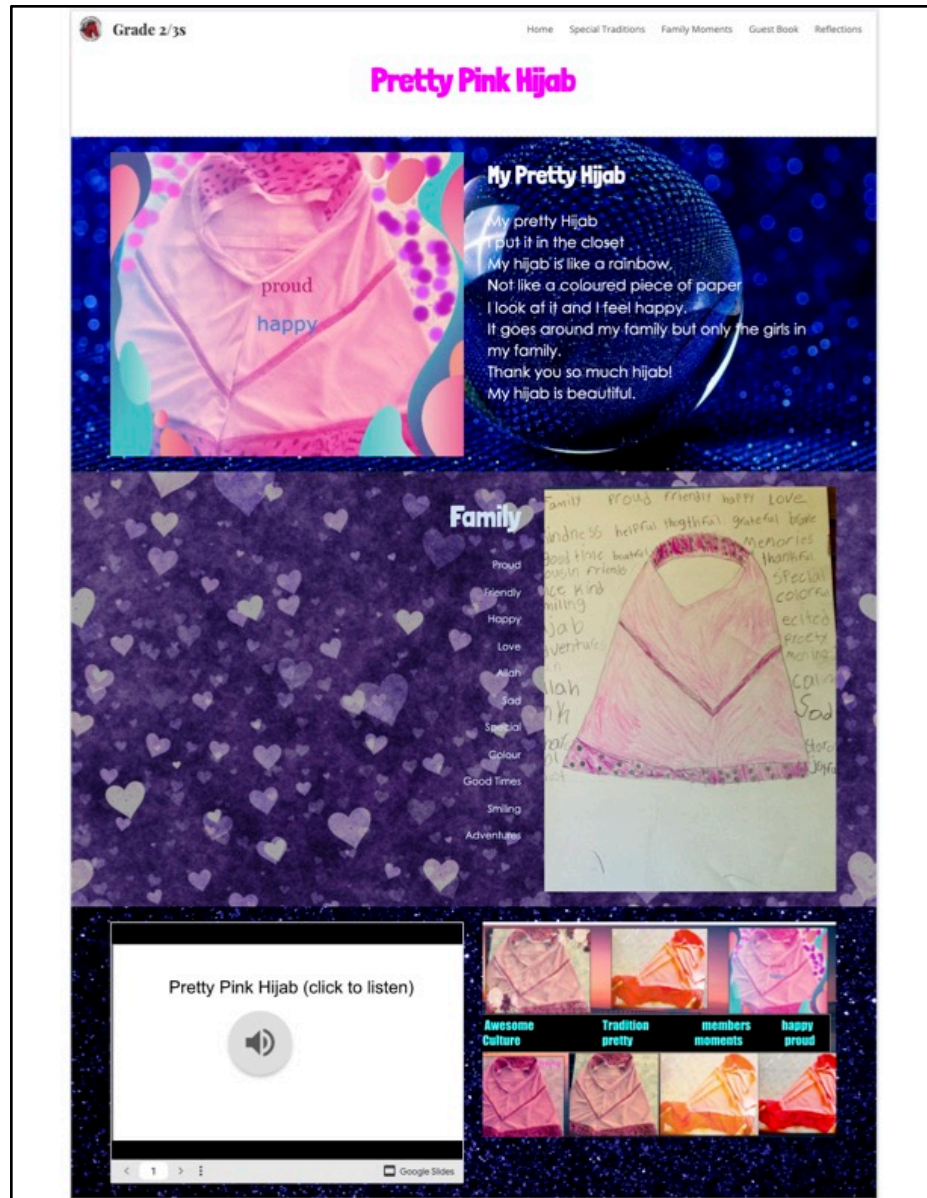


Figure 44. Aisha's final webpage.

Figure 44 illustrates the final design chosen by Aisha, whose special object was her hijab. Her poem, collaboratively edited with her peers, begins the page, followed by her memory drawing, an audio track of her reading her poem, and a collage of the edited photos made to look important by her classmates. As each artifact was created collaboratively

with peers, Aisha was allowed the time and opportunity to share her understanding and feelings towards her hijab. Conversations often included other aspects of her culture, such as celebrating Eid. Classmates asked questions throughout the work as they arose:

Arianna: “I don't really get why you have to wear it?”

Kya: “Because it's part of her culture – it's traditional.”

The example above illustrates a situation where another student spoke on Aisha's behalf, explaining her understanding of the hijab. Spending time on these objects allowed students to share more than just one moment, memory, or feeling with their peers. With each artifact, students seemed to learn more and more about the special objects, cultures, and traditions of their classmates.

Aida's final webpage (see Figure 45) was collaboratively designed by the class, as Aida was absent from most online sessions in June. Each decision regarding the placement of her artifacts was discussed and agreed upon by the group. Students were asked to consider Aida's point of view and feelings while making these decisions. Students seemed considerate and took time to make each decision for their classmate. When Aida did join, she was shown the choices and she accepted them with only minor changes (e.g., moving object text to right alignment).

Students were given opportunities like this throughout the creation of the website, which allowed for student agency and leadership.

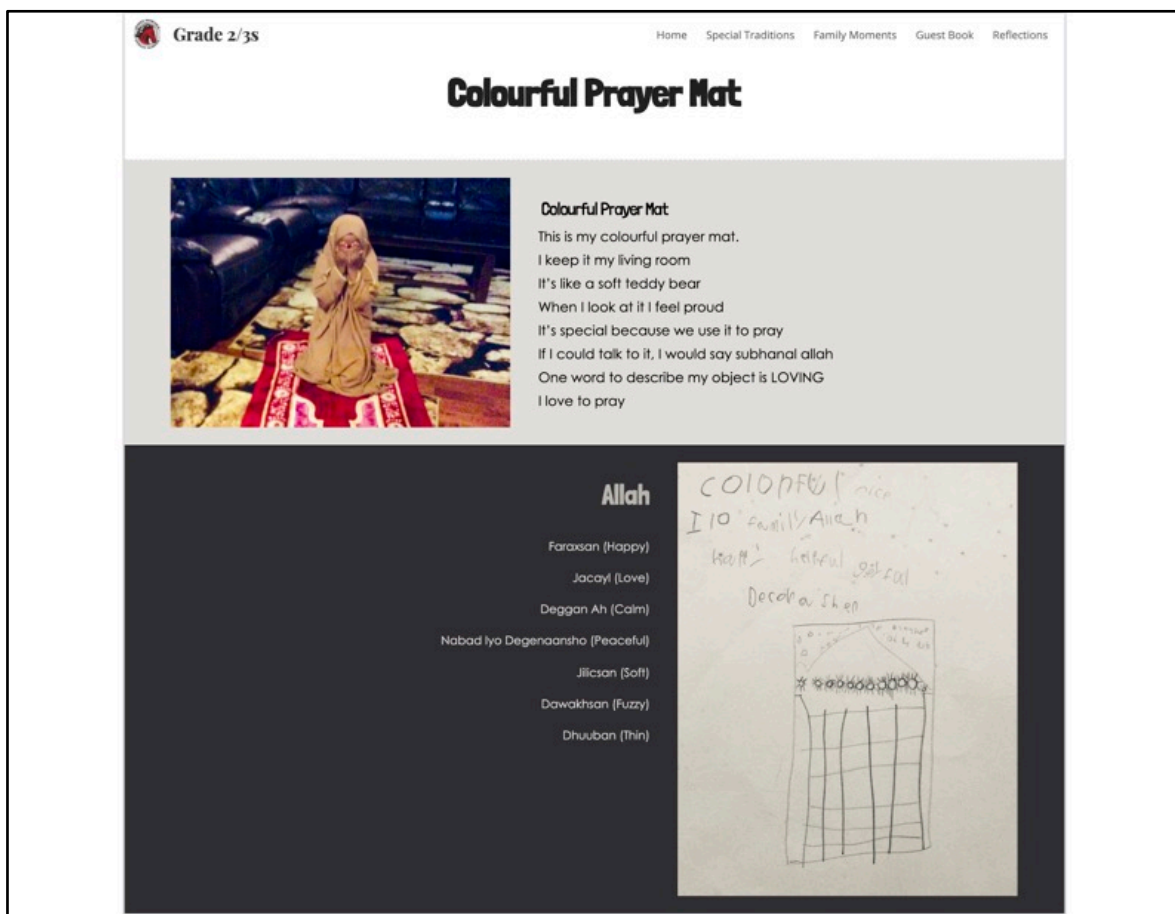


Figure 45. Students collaborate to design Aida's final webpage.

Once done, we shared the website within our own school as well as with the local art gallery (see Figure 46). We wanted to allow others the opportunity to interact with our work as they considered our overarching question around respecting cultures and traditions. After posting the update on my Twitter page, *A Kid's Guide to Canada* showed interest and asked to further share our page on their interactive map of Canada

(see Figure 47). Allowing for interaction with the site was the final stage within the DT process: a chance to share our work and understandings with others. We asked those who visited the site to reflect upon our overarching question, and to engage with others in conversation regarding cultures and traditions.

Currently On Exhibit In The Community Gallery

Community Highlight: Now Showing!



Special Moments & Family Traditions

Special Moments & Family Traditions:
 A Virtual Art Exhibition featuring work by Grade 2/3 @James Morden School, Niagara Falls, Ontario.

Synopsis: Students explore through photography how objects can tell a part of their family story, culture, and traditions. We reflect on the question, "Is it important to respect the diverse cultures and traditions within our community?"

[SEE THE EXHIBITION HERE](#) (This link will open another website in a new tab)

Figure 46. Access to our website was provided by the local art gallery.



Figure 47. A Kid's Guide to Canada adds our website to their interactive map.

Once on our website, viewers were encouraged to join the discussion by visiting the "Guest Book" tab. Here, viewers were prompted by a series of questions including "why should we respect the diverse cultures and traditions within our community?" Here is a sample of the responses (78% elementary school students):

"Because we are all people."

"Because everyone is human."

“Because our diversity is our strength!”

“So, we can share and get to know each other.”

“Because traditions are fun!”

Responses seemed to indicate that viewers could see the value in learning about others, and respecting cultures and traditions that are different from our own.

Sharing this project with others allowed students to see that their work could reach beyond classroom walls, sharing their cultures and traditions with not only their peers, but their community as well. They had agency over the final site, and took risks by sharing their ideas with a larger audience. This final project allowed me to stand back and observe the work we had accomplished. As the work concluded, it was time to go back and re-examine and refine my work as a teacher-researcher by looking deeply and carefully through all the data again. I was sure that CE had, in fact, been nurtured – but how and why? What additional factors influenced the data? How could I continue this work in future years, and what were the implications for others? These questions led to SHARE, an area for reflection and consolidation of this work.

SHARE

Where I Have Been Determines Where I Am
Going



Figure 48. My daughter and I embarked upon an ambitious hike.

During the SHARE stage, designers share their work with others to not only present solutions uncovered in relation to the question posed in ASK, but also to allow others to interact with and reflect upon the work themselves. It is within this stage that designers consider their new questions and begin at ASK once again. Within this section, I will share my thoughts and current understandings in relation to my research question. Additionally, I will discuss the themes which were uncovered, implications for practice, and the limitations experienced in the hope that new questions are brought to light for this work to be continued.

My subheading for this section – “Where I have been determines where I am going” (see Figure 48) – speaks to my own positionality and journey both before and within this research. As an educator for nearly twenty years, I have had multiple experiences which have shaped my teacher-identity, as well as my understanding and relationship with public education. I have held numerous positions within my school board, each providing unique experiences which have influenced my learning.

The first decade of my career was spent in schools with very little cultural diversity. Most students looked the same: they had white skin, came from similar families, and celebrated the same traditions throughout the year. They listened to the same types of music, played the same games, and spent weekend time at the same churches and community

centres. These schools reminded me of the ones I had grown up in. They seemed very familiar to me; I could pronounce everyone's name, and could relate and identify with student experiences, as they mirrored my own.

When I accepted a new role as an instructional coach, I was assigned to six schools throughout Niagara Falls. As I travelled between them for the first few weeks, my eyes were open to the vast diversity that existed within the schools of my board. As an observer, I was intrigued by each culture I witnessed. I remember wanting to ask questions, but was afraid that this would be seen as ignorant or – even worse – impolite. I remember watching students and teachers interact, wondering if either really understood the other. As I worked with teachers to incorporate critical thinking and inquiry into their classrooms, I began to see the potential of this type of learning to inspire and nurture a deeper understanding of difference. When the time came to choose between a leadership role and a classroom, I specifically asked for a classroom: a classroom in a community with diverse learners, diverse cultures, and diverse needs. I needed to learn more.

It has been 8 years since then, and although I have explored critical issues with all my students in that time, I have shied away from culture and traditions; focusing on the environment always seemed like a safer place

to be. When my Grade 2/3 students expressed that they did not know what the word *Indigenous* meant, I knew it was time: time to explore diversity, culture, traditions, and how we are prepared to interact and live in a world that is diverse, where people are different.

Summary: Overall Themes

This research examined experiences created in an elementary learning environment, with the intent to nurture critical empathy (CE) by utilizing design thinking (DT) and critical media literacy (CML) as pedagogical practices. Students worked for a 6-month period on a project that, in part, involved photographing an important family object which illustrated to them part of their culture or traditions. Peers proceeded to edit and manipulate these photos using an online editing tool (Pixlr) to make the objects within the photo look important. Students also created other representations of their photos including poetry, drawings, and collages. All work was done collaboratively, which allowed students to learn not only about the medium of photography, but also about each other. Students consolidated their work by creating a website that could be shared with a larger audience, further encouraging reflection and the broader discussion of cultures and traditions within our community and with others. My research question guiding this process

was: In what ways will critical empathy be nurtured within my class community by partnering design thinking and critical media literacy?

Data was collected throughout the project, and included photographs taken by me and students, audio, and video recordings, as well as my reflective journal. Using my adaptation of Suchar's (1997) framework, data was analyzed on an ongoing basis, and I was able to identify a variety of codes. As I wrote about and considered these codes (EVALUATE), three themes emerged. These themes helped me to consolidate my data and allowed for greater clarity on the relationship between competencies and nurturing empathy within this specific learning environment.

Each code came from a careful analysis of data, observations made from intentionally designed learning experiences (Kochendorfer, 1994; Rose, 2014; Suchar, 1997). Through this lens (see Table 2), seeking moments that nurtured CE, I began to see how competencies were interwoven. As I began to observe and revisit competencies within the same lessons, I was able to collapse codes and group them into themes (see Table 4). My findings within EVALUATE & REFINE speak to this process and the themes that crystallized for me. I also realized that it was not as simple as teaching one competency or another, as they all worked together to create an environment that seemed to nurture CE.

This realization connected to my previous research and understandings related to SEL. As described in IMAGINE, scholars (Borba, 2020; Konrath, 2018; Mirra, 2018; Zaki, 2019) believe one-time SEL lessons fall short in developing empathy, and Mirra (2018) believes connection between SEL learning and lived experiences is essential to nurturing CE. By creating learning opportunities grounded in DT and CML, students explored their lived experiences with culture and traditions. They had opportunities to explore their understanding of themselves and their classmates. By reflecting on competencies within lessons, they worked to build their relationships with each other, which appeared to deepen their ability to acknowledge and understand cultures and traditions different from their own.

Table 4

Competencies at Different Points in the DT Process

DESIGN THINKING PROCESS	FOCUS CODES
ASK	Collaboration & Communication
IMAGINE	Feelings, Points of View, & Relationships
DESIGN	Collaboration, Communication, & Problem Solving
BUILD	Agency, Risk Taking, & Leadership

EVALUATE	Collaboration & Communication
REFINE	Feelings, Points of View, & Relationships
SHARE	Agency, Risk Taking, & Leadership

Working Towards a Common Goal (Collaboration, Communication, & Problem Solving)

Throughout and within the project, students worked towards common goals such as developing criteria, editing photos, providing feedback, and creating a class website. As I analyzed data from these types of learning experiences, I saw that these lessons required students to collaborate, communicate, and solve problems. With each new opportunity, I saw this pattern continue. It appeared to me that to work successfully within a group of peers to achieve a common goal, students had to collaborate, communicate, and solve problems.

It became evident to me that students needed guidance with each of these competencies if CE was to be nurtured. It was not enough to simply provide an opportunity to collaborate, communicate, or problem solve; in fact, early in the project, collaborative opportunities seemed to lead to hurt feelings, disagreements, and someone feeling left out. I had to take the time to consolidate and further explore these

competencies with the class to help them build strategies for successful interactions with one another. When I saw students successfully interacting with their peers that I could see CE being nurtured. Konrath et al. (2011) believe that empathy is crucial to the success of these types of social interactions, and Borba (2020) believes that without multiple opportunities to practise these competencies, they cannot be strengthened. By focusing our work on the specific cultures and traditions within our class, students were able to consider each other while also working to strengthen collaboration, communication, and problem solving daily.

DT allowed my students to explore their questions and work with their peers towards solutions while practising collaboration, communication, and problem solving. Empathy is embedded into the DT process (Goldman & Kabayadondo, 2017), which allowed students to consider their peers while they imagined and edited their family object photos. DT did much more, however, than simply guide students to create an edited photo. DT provided the framework which shaped experiences to nurture not only the competencies within this theme, but also CE. Researchers agree that DT allows students to design and deepen collaboration, communication, and problem-solving strategies within learning environments (Davis & Littlejohn, 2017; Long, 2012; Watson, 2015) and that developing these competencies can be a starting point to

building empathy (Borba, 2020; Konrath, 2018; Mirra, 2018; Zaki, 2019). As students in this project learned to communicate, collaborate, and solve problems with one another, they had to consider each other's points of view and through this work, seemingly learned more about each other. With a commitment to embracing these competencies within a leaning environment, the potential to nurture CE is great. DT helped to create this environment, allowing students to work towards a common goal within each separate design.

Similarly, photography (as part of CML) also provided an opportunity for students to work towards a common goal and practice collaboration, communication, and problem solving. As students worked together to make each other's family objects look important, they learned not only about photo editing and tools, but they also began learning more about each other, as partners and as diverse individuals with different cultures and traditions. Photography allowed my students and I to easily access CML, regardless of student reading levels or fluency with the English language (Kellner & Share, 2019; Schiller & Tillett, 2004). Students were able to express themselves by sharing their cultures and traditions while experimenting with creativity through an online editing tool, representing the additional benefits of CML (Eisner, 2002). This project allowed students to practise collaboration, communication, and problem

solving while exploring and learning more about classmates in an environment that nurtured CE.

Throughout the project, my students' ability to work together towards a common goal seemingly grew as collaboration, communication, and problem-solving competencies improved. These competencies had to be nurtured. As a teacher, I had to slow down and take the time to discuss, reflect upon, and help students develop strategies to be successful. As this work began, so did the work of nurturing CE. The experience of each student was certainly unique for them. My students worked towards common goals in a learning environment where collaboration, communication, and problem-solving were consolidated as often as curriculum content – and this environment created a space with the potential to nurture CE.

I, again, reflect upon Jack's experiences throughout the project. As his teacher and having known him and his family for several years, I return to consider his journey. I saw a young boy who moved from preferring independent work to a designer who was willing and capable of leading group work to accomplish an overall goal. I observed a boy who had rigid views about culture shift his thinking to a child who considered, advocated for, and designed a photo that recognized and celebrated a peer's faith. Although his motivation for making these changes was

undoubtedly based on multiple factors, clearly these classroom experiences introduced Jack to strategies that strengthened his competencies while learning about an unknown culture and religion. This is the work that empathy experts (Borba, 2020; Konrath, 2018; Mirra, 2018; Zaki, 2019) feel is needed: experiences and opportunities to work with and learn about people who are different from ourselves.

Building Experts Among Us (Agency, Risk Taking, & Leadership)

CE involves taking a risk, being socially responsive to those around us – even if others are not (Mirra, 2018). Risk taking, in this way, is not easy and requires practice. Students need opportunities to practise being leaders, taking risks, and making decisions in safe settings for these skills to become habitual (Borba, 2020). Borba (2016) refers to risk taking children as *upstanders*, as they have courage to speak out for those in need. Although many classroom teachers practise mock bullying scenarios with their students, these narrow experiences – just like one-time SEL lessons – are often isolated to but a few classes, in which students have scripts of what they could say in these pretend situations (Konrath, 2019; Mirra, 2018). Although these types of lessons may be helpful to some, I believe the potential to develop the courage Borba speaks of lies more so in providing students with opportunities to take risks, make their own decisions, and lead others.

Throughout our project, students had opportunities to take risks, make decisions, and lead peers within learning experiences focused on a topic that was of importance to them (e.g., object photos). Students led their own learning by becoming Pixlr experts, worked to make decisions with partners, and led lesson consolidation periods which highlighted their work. Konrath et al. (2011) believe that considering another's point of view while interacting with them can be an easy way to build empathy. Students were given the time and opportunity to interact with one another within each experience, considering the point of view of the photographer and group partner. Students could call upon specific experts (e.g., for lighting, colour) if they were struggling with an editing feature. As everyone was an expert at one feature, this opportunity was equitable for most students, and often allowed them to practise and demonstrate being a leader. Borba (2018) believes that lessons which allow students to recognize they are capable of difficult things are invaluable and lead to the moral courage necessary for CE. As I analyzed data related to these lessons, risk taking, leadership, and agency appeared simultaneously leading to my *theme: building experts among us*. I saw that these competencies were separate, but like those in *working towards a common goal*, taking risks, making decisions about learning, and leading peers all contributed to an environment that nurtured CE

critical empathy. By *building experts among us*, I was allowing students to find and use their voices to express their opinions, feelings, and plans to move work forward.

DT and photography (as part of CML) allowed for and guided these opportunities. During the EVALUATE & REFINE and SHARE stages of the process, students were able to practice their 'expert' skills. Students were focused on photo edits that required consideration of others (an element of CE) while, at the same time, required them to lead, share with, and teach others. Experts were not afraid to disagree with one another and, as a class, we navigated how to do this both confidently and respectfully. Students were able to practise standing up for their decisions and beliefs about their choices in a safe environment, where listening to one another became increasingly important to learn about new photo editing skills. Just as Wendy Ewald questioned the relationship between photographer and subject, these learning opportunities questioned the teacher/learner relationship. Our classroom environment allowed for the development of *experts among us*: experts who owned their own learning not only about photography, but about each other.

Understanding Us and Me (Feelings, Point of View, & Relationships)

Mirra's typology (see Figure 3) illustrates her understanding of empathy. CE, according to Mirra (2018), is the ability to not only consider another's point of view, but to support them and advocate for them openly within society. As I analyzed my data, I saw the competencies of understanding feelings, point of view, and relationships occurring simultaneously within the same lessons. I began to see that to nurture CE, my students would have to be able to read feelings, consider point of view, and value the relationships they were building with their peers. This understanding led me to create my theme of *understanding us and me*, as it became more obvious to me that student understanding had to involve knowing themselves as well as others.

One of our early learning experiences during this project got me thinking about the competencies that I included in *understanding us and me*. I was asking students to critically read photos, thinking about both observations (i.e., what they could see in the photos) and inferences (i.e., what they could guess based on what they saw). Immediately, students began inferring with comments like:

"I know that girl in the picture is angry because when I'm angry I cross my arms like that."

“I know she’s sad because when I’m sad I put my head down like that.”

“I know she’s excited because her eyes are big, and her mouth is open and that’s what I do.”

I noted that students could read body language and to justify their opinions, they referred to themselves having felt or reacted that way in the past. This was a good place to begin the journey towards a greater understanding of both ourselves and others. Understanding what others feel, need, or want takes practice (Borba, 2016; Konrath, 2019; Zaki, 2020). Additionally, Zaki (2020) believes that face-to-face interactions are essential for nurturing empathy, as students can look at one another and read body language before reacting; additionally, knowing oneself helps to recognize these emotions in others. DT allows opportunities for this practice, while CML sets the stage for students to analyze and interpret points of view, feelings, relationships, and messages that are around them every day.

Konrath (2019) believes that the most effective way to teach empathy is through experiences that allow us to examine another person’s life. Students were provided opportunities to imagine their peers’ lives throughout this research. Through editing photos, providing feedback for poetry, and sharing drawings and memories, students consistently

thought about each other and themselves, the specific work needed to nurture CE. As students read their poems, shared the stories around their important family objects, and read out adjectives connected to their objects, peers were able to experience each other's lives. They asked each other questions, considered how their own objects were similar, and shared how they had been inspired by each other's work. Conversations about photographs of *Aisha's Hijab* or *Yusuf's 99 Names of Allah* lead to conversations about the Muslim faith and celebrations like Eid. Arianna shared her family's tradition of hunting, and students considered and reflected upon the sadness of killing a deer and the happiness of spending time with father figures. Emotions were encouraged, and conversations were real.

Although the long-term impact of action research on children is unclear, the learning environment created through DT and CML nurtured conversations about people's lives. The learning experiences we engaged in provided students with opportunities to build relationships with their peers, consider their own feelings, and the point of view of others. Mirra (2018) believes that identifying with the experiences of others can inspire and encourage social action. Borba (2020) believes that CE can be taught through experiences that allow students to learn about the feelings and points of view of others. This project demonstrated that the

learning experiences within our classroom did nurture CE. I believe that some students will remember our work together, and if they are in a situation where a hijab is made fun of, or a person of colour is spoken down to, they will remember Aisha's hijab and speak up. They will speak up because they understand not only *us*, but also the similarities to *me*.

Throughout this project, students were provided with opportunities to work towards common goals, take risks, and act as leaders as they learned about themselves and their classmates. Through experiences grounded in DT and CML, students built on competencies such as collaboration and communication. Each day and lesson provided additional time to practise these competencies in an environment that increasingly nurtured CE.

Implications for Practice

This research has potential implications for both educators and teacher education.

Educators

There are numerous components within this project that have implications for practice both working together (as I combined them) or on their own. The following section will take a closer look at each component within this project, and its potential specifically within the realm of teaching practice.

Critical Empathy

This research offers an alternate framework to teaching SEL lessons, focused on the nurturing of CE. The themes of *working towards a common goal*, *building experts among us*, and *understanding us and me* could be used to guide the learning environment in a variety of subject areas. A focus on practice, reflection, and repetition are crucial to the success of nurturing CE. It is important to co-create anchors (e.g., collaboration looks like, sounds like, feels like) that can be referred to and built upon as student understanding grows. Educators need to develop the perseverance required to truly nurture CE: CE cannot be accomplished in one day, or even in a whole school year, but rather, to encourage the growth and development of CE means an ongoing commitment to providing opportunities and experiences for students to learn about, care about, and advocate for one another.

Nicole Mirra (2018) believes in educating for empathy. She believes that children come to school with their own questions and concerns about the world that are often ignored by their teachers and the education system itself. Mirra (2018) advocates for the type of learning that involves considering diverse cultures and traditions; she also advocates for an education system that supports this type of learning in addition to promoting civic action outside of school. This research project

offers educators an entry point into the type of work that Mirra speaks of: the type of teaching that can nurture CE and inspire social change.

Design Thinking

For educators interested in exploring any sort of problem, DT provides a framework that enables the development of a variety of competencies (e.g., collaboration, communication, and risk taking) in addition to framing a learning experience to be designed to create a solution. DT can be used for a variety of subject areas, taught independently or integrated, allowing both homeroom and single subject teachers to utilize this pedagogy. Researchers agree that DT can bridge multiple disciplines and encourage several competencies (Hetland & Winner, 2004; Trilling & Fadel, 2009).

This research provides educators with an example of how to begin using DT within their classrooms, as well as evidence of its impact on competencies such as CE. Like Watson (2015) found with his students, using DiGiorgio's framework for DT (see Figure 7) allowed my class to design much more than products. Watson's students designed art to reach multiple audiences, while my students designed a website to teach viewers about their cultures and traditions, all while promoting thought and reflection upon social issues of respect, acceptance, and advocacy. By focusing on CE, my intent as an educator shifted. Unlike experiences in

the past where my focus was on curriculum *content*, I placed a priority on *competency* development to nurture CE. My findings indicated that students designed much more than a website or a photo; through the design of each product, students designed several competencies that seemingly nurtured CE.

DT draws parallels to other instructional pedagogies such as inquiry, play-based learning, and the creative process. Each of these pedagogies and frameworks allow for the flexible exploration of problems which honours student voice and choice throughout projects. These pedagogies, like DT, nurture several competencies and are worthy of further research with a focus on nurturing CE. Additionally, pedagogies such as the creative process could be further explored and applied in future research to make clear and direct connections to DT, potentially enhancing both.

Photography (Critical Media Literacy)

Photography allows an easy entry point for educators to begin working with CML (Kellner & Share, 2019). The four types of digital engagement that Mirra et al. (2018) propose are all accessible through photography. Students can discuss how they consume, produce, distribute, and invent photography with practical, relevant, and often personal examples. Allowing for this type of study within classrooms makes

learning approachable and allows for self-expression for students, regardless of reading levels, race, language, or gender (Eisner, 2002; Schiller & Tillett, 2004).

Inspired by the work of Wendy Ewald, I designed a series of learning experiences that would allow students to engage in conversations and an exploration of both photography and cultures and traditions. Like many of Ewald's (2012) projects – for instance, *The Best Part of Me* and *Black Self/White Self* – I wanted students to be given an opportunity to illustrate a part of their lives and a space to share their thoughts, ideas, and questions about cultures and traditions within our community. I hypothesized and corroborated that these experiences would frame an environment for students to learn about one another and an opportunity to recognize their similarities more than their differences. This research provides educators with our narrative and our journey with DT and CML, photographing important family objects while nurturing competencies such as CE.

Combining Pedagogy to Nurture Critical Empathy

By combining these specific pedagogies, DT and CML, I was able to create a learning environment that was focused on nurturing CE. This shift of focus was somewhat new to me. Although I had taught with competencies in mind for years, making CE a focus shifted the course of

my learning experiences. I wasn't afraid to take time to consolidate specific competencies like collaboration. My anchor charts reflected strategies to nurture competencies as opposed to curriculum content. Students still met curriculum expectations; the difference, however, was in our focus and the shift in what was made to seem important.

By combining these pedagogies, I also discovered that several other competencies were nurtured and seemed essential to promoting the development of CE. Collaboration, communication, and problem-solving were observed nearly every day, as students worked together to complete specific learning goals. Risk taking, agency, and leadership opportunities were also provided and encouraged as I stood back and allowed students to build confidence and courage. By working with personal photos of family objects, students were able to explore feelings, relationships, and the points of view of their classmates, further allowing us to learn about ourselves and each other.

This research provides practical and specific examples of how others can frame learning experiences to foster the growth and development of competencies. Although taking on a similar project similar may seem daunting, remembering that it all started with a question is an essential and powerful reminder. This work evolves reflectively as the

process unfolds, allowing opportunities to nurture not only curriculum expectations but competencies, as well.

Thoughts for My Own Future Research

I wonder what students thought of this project. I wonder if they thought it was as important as I did. If I had more time to continue with this research, or if I were to do something similar again, I would survey students throughout the process to identify what they saw as having importance within our work. I would be interested to see if they felt competencies like collaboration were more important than skills like photo editing. I wonder if this would influence a student's contribution and effort towards the work. For example, I wonder what Nya and Kaleb would find important about this project, as they seemed disconnected from the work at times, when compared to Arianna or Aisha, who seemed engaged and invested in conversations and experiences.

Additionally, I am now incredibly drawn to artifactual literacies. When I began this project, I chose the idea of photographing an important family object not based on artifactual literacy knowledge, but rather, an idea that this would be an achievable way to bring cultures and traditions from home into the classroom (Rowse, 2011; Rowse et al., 2018). Due to multiple COVID-19 restrictions, having iPads travelling back and forth from school to home was a safe way to see into classmates'

lives. As I dug into related research, I was drawn to the work of Pahl and Rowsell (2010), and saw the potential to explore their research further through my lens of DT, CML, and CE.

Teacher Education

John Portelli and Christina Konecny have written multiple articles on the neoliberal agenda in Canada, and specifically, the impact this agenda has had on both teachers and teacher education (2013). They are researchers, but have also spent years working in Canadian teacher education programs. They believe that:

School systems organized according to the results-based logic of neoliberalism instrumentalize teachers, dehumanize students, and make the classroom into a space of performance and efficiency, thereby denying more robust educational experiences as well as the communal aspects of schooling – let alone permitting any genuine engagement with social problems, political issues, or cultural critique. (Portelli & Konecny, 2013, p. 91)

Portelli and Konecny make their beliefs clear: critical educational practices are incompatible with a neoliberal agenda. Based on my experiences and research, I couldn't agree more.

As mentioned in ASK, and throughout this project, I have become increasingly concerned about what is deemed "important" in education.

Upon reflection, it may not have been coincidental that I framed lessons and experiences around considering what makes something look important. Thinking back to the type of education Adorno (Morrell, 2008) speaks of (referenced in ASK), I sought to provide – and succeeded in allowing – my students to engage in education that allowed for real conversations about critical and relevant social issues, a stark contrast to neoliberalism. Konrath (2019) and Borba (2016) also speak to this agenda within education and society. They believe that society often places incredible pressure on young adults due to the importance placed upon individualism and success. Konrath (2019) believes that young people often feel guilty if they take a night off from their studies or extra-curricular activities, knowing that parents and teachers expect them to produce. Borba (2016) agrees, and warns parents and teachers against placing such high importance on achievement. Neoliberal beliefs have contributed to the current mindset that individual performance and a one-size-fits-all version of achievement and success is more important than critical thought and empathy.

Neoliberalism has given rise to the belief that educational leaders can determine “best practices” that can be taught in all situations – regardless of contextual differences (Portelli & Oladi, 2018). This type of thinking reinforces the value placed on standardized tests, continuous

assessment, and a top-down hierarchy between both theory and practice *and* policymakers and practitioners.

Neoliberalism also takes for granted that there is one version of success, one that maximizes an individual's human capital (Baez, 2007, Basu, 2004). Within an educational context, focus on the individual leaves little room for the development of competencies to nurture CE. I have certainly felt this pressure throughout my years of teaching but have spoken out against it, convincing those in higher positions to allow me the freedom to explore fluid and reflective pedagogies such as DT and CML. Given this freedom has allowed me to provide students with opportunities tailored to them, their strengths, and interests, ultimately producing multiple versions of what success can look like as opposed to one version decided upon by someone far removed from context.

This project serves as an example of an alternative to the standardization of "best practice" teaching. The focus of my teaching and research – nurturing CE – couldn't be any further from the type of education that neoliberalism promotes. This project disrupted the status quo power relationships that exist within classrooms to nurture competencies and inspire social change. Freire (1972, 1994, 2000) refers to this negotiation of power dynamics as *praxis*, a process which requires "reflection and action upon the world in order to transform it" (p. 52). As a

teacher-learner, I was constantly negotiating lesson development and instruction against what I observed my students both saying and doing, placing value on their questions, ideas, and opinions. Our work allowed for the critical curiosity that Freire (1972, 1994, 2000) speaks of, as students worked to illuminate the importance of cultural objects while considering points of view. Their final website consolidated their learning and illustrated a part of their own identities, while encouraging others to consider how we treat those who are different from ourselves.

Our understanding of what teaching looks like will not change until we see it, live it, and experience it. This project provides an example of the endless possibilities for teaching, much like the student website. Our website illustrated the cultures and traditions within our classroom, allowing viewers to learn about diversity while reflecting on our bigger question regarding respect within our community.

This research also provides an example. An example of instruction that allows each student to be successful. A type of instruction that values competencies over standardized results. A type of instruction that allows viewers to reflect on their own practice, and consider the bigger question regarding what is valued in education and how our decisions as educators may impact the future.

Limitations: There's Always a Hurdle

Limitations within this action research project included both internal and external factors explored below.

My Own Hurdles

Throughout this project, I tried to remain reflective and avoid predicting or influencing an outcome based on my previously held beliefs. Although I reminded myself of this often, my experiences and past learning undoubtedly influence who I am today.

My journey as an educator has included stays in multiple classrooms from K-8. In positions such as homeroom teacher, instructional coach, learning resource teacher, STEAM teacher, and teacher-librarian, I have had experiences that shape who I am as an educator today. As I wrote at the beginning of SHARE, I believe that where I have been determines where I am going, each experience impacting the next.

As an instructional coach, I was asked to assist teachers from K-8 with their instructional practice. During this time, I learned more about research-based pedagogy, and was able to try these pedagogies within numerous and vastly different classrooms across Niagara Falls. These experiences shaped my understanding of inquiry-based learning, critical thinking, and the development of competencies.

After I returned to the classroom, work with companies such as HP and Digital Promise Global introduced me to the pedagogy of DT. I utilized this pedagogy with a group of Grade 3 students as we considered a local development which threatened a large wetland area. This project led to students holding an exhibit at a local children's museum and shortly after, I was asked to speak at a global conference regarding DT and competencies.

As I began this project, I already believed in the potential of DT and CML. I believed that developing competencies within a classroom was difficult, yet important work. I wasn't entering this project with a completely unknown question; I believed that DT and CML would, in fact, nurture CE and therefore, I had to be cautious not to look for what I *wanted* to see. These beliefs, based on years of experience, affected my research.

I have taught at my current school for 9 years. Throughout this time, I have been able to learn about multiple families and have taught numerous siblings as each comes and goes from my room. My experiences and interactions with families may have also influenced my work. As a teacher, I have a history with families and their beliefs. As a researcher, I intentionally tried not to infer students' motives or feelings.

Separating teacher from researcher roles proved difficult, however, as I often felt I knew more than what the data was in fact illustrating.

Action research itself also created obstacles to overcome. The act of simply setting up and initiating this type of research required intense effort, planning, trust between participants, and a dedication to prolonged engagement not only in tasks, but also in research methods (Koch & Kralik, 2006). The global pandemic added an additional layer of stress and difficulty to the process, as it was impossible to predict how I would be instructing students (i.e., in-person vs. Virtual schooling) from week to week, and even day-to-day. Additionally, action research is context specific in nature, making conclusions difficult to generalize or apply to other situations (Whitehead & Day, 2012). Knowing this in advance of the project added another consideration throughout my work – a consideration of how my work could be compared to a variety of other learning environments in order for findings to have relevance beyond my own question (Crozier et al., 2012).

COVID-19

This project took place during the pandemic. Inevitably, it was affected by restrictions, closures, and lock downs. It is difficult to predict how results would differ if we had been in-person for the entire period of data collection. As we moved to virtual learning, students were unable to

collaborate in the same manner as we did in-person. Although devices were lent out and internet was provided to those who required it, some students struggled to attend regularly, if at all. Those who were present struggled with distractions within their makeshift learning environments. Students worked mostly from beds and floors, with numerous family members and pets around them. The face-to-face interactions that Zaki (2019) believes are so essential were missing, especially given the poor internet connections and those who turned their cameras off.

There was a consistent group of 15 students who attended regularly. These students, despite the distractions, seemingly did their best to engage in the work. They adjusted to new ways of learning, such as breakout rooms and contributing to interactive white boards. These 15, although present, spoke daily of wanting to return to the classroom. They were completing assignments and engaging in conversations; however, it was clear through their own comments, fears, and questions that they were looking forward to a time when we could “actually” be together again.

Work was much slower online. What would take a moment in the classroom would consume an hour online. Waiting for students to turn microphones on and off, type into the chat, or simply return their attention to a conversation made small learning goals seem huge. Like my students,

I, too, could not wait to be back together. Unfortunately, we spent the remainder of the year online. I often wondered how the project would have progressed if we remained in the classroom, where distractions and technical difficulties did not constantly interfere with our work.

Graduate Studies

Completing my Masters of Education part-time, while working full-time, also included hurdles. One of these included the format itself. When I first read Brock's Med guide and considered the examples for my research, none really seemed to fit. I was engaging in innovative and creative teaching, and couldn't see the connection between my work and the standardized formats provided. I remember scratching my head thinking, *how will I fit my size 9.5 feet into these shoes?* I used to try to wear a size 8, because I thought a size 9.5 looked too big – but it didn't take long to realize that only led to pain and blisters.

I feel fortunate to have had Dr. Collier as my advisor throughout this project. She embraced the idea of creating something new, and worked to support my design throughout the process. Although difficult, with no real examples to follow, I am happy that I took this challenge on with Dr. Collier's assistance. Everything seemed to fit so much better when I was given the opportunity to *design* my own design.

I can't speak for others, but for me, this was important. If action research is truly about the teacher exploring something of interest and importance to them, the design must match – otherwise you're just stuffing a metaphorical 9.5 into an 8.

Concluding Thoughts

When choosing a new destination to visit, we often don't start with a map. We imagine a place that will allow for a remarkable experience, a place where our whole family feels comfortable, and there's something there for us all. We don't pull out an old foldable map, or even pull up Google maps on our device and insist on knowing each step of the journey. Sure, we need to know where we're going, but we seldom know anything about the stops we'll make along the way.

The most popular destinations in education need to be reconsidered. If we're all visiting the same traditional and standardized locations, what experiences for growth and change are possible? If the past few years have taught us anything, it's that we need to be able to grow, change, challenge, and support each other in a world that still burns bright red. CE can be nurtured in a pedagogical environment built on DT and CML. It's a destination I will certainly return to, now knowing the final destination but with a willingness to explore new places along the way. It's hard to even imagine the flames of the world subsiding right now.

I can't help but remain hopeful, though, because our world is full of explorers who don't need to see the map. They're sitting – albeit in socially distanced desks – right in front of us.

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