(Re) Encountering Design Thinking in Education

- An Autobiographical, Arts-informed study

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Table of Contents

Abstract

This qualitative research examines my (re)encounters with Design Thinking and Design for Change (DFC). Design Thinking is a problem-solving methodology that emphasizes empathy, experimentation, and iteration so as to develop innovative solutions in education while Design for Change (DFC) is a global movement (inspired by Design Thinking) that encourages children to identify and solve problems in their communities through a structured design thinking process. I was involved in a DFC facilitation in China and Design Thinking initiatives in India and Peru. Becoming conscious of one's own existence and experiencing in the present moment are central to design thinking; as such, the approach implies a certain kind of curricular encounter on the part of the student as well as the teacher. In my research, I take the perspective of the teacher. The encountering in my thesis title highlights, first, my own autobiographical encounters with, as well as returns to, these lived key moments; I conceptualize these as (re)encounters. This process is supported by the reflection [(re)encounters] of eight other participants, most of whom became teachers. My study focuses on the following research questions: What kinds of insights and implications can arise through analyzing teachers' implementation experiences of DFC in China? What have been my own educational experiences (as student and teacher) within and leading up to my participation in design thinking and DFC? How have my own and other teachers' re-encounters with this initiative informed our development and thinking as teachers? How can Design Thinking and DFC be linked with other initiatives in education (e.g., the collaborative inquiry process of New Pedagogies for Deep Learning (NPDL)?

The thesis research combined autobiographical with arts-informed methodologies. Autobiographical writing, drawing on the method of *currere*, was used to reflect on my own past experiences as a student and teacher. As part of the analysis, found poetry was used to distill and focus on the re-encounters to gain a deeper and more nuanced understanding. Interviews along with photo elicitation techniques were used to elicit the thinking of 8 participants from China and Taiwan. Both sets of data were analyzed thematically. One major finding was the salience of certain kinds of encounters with family, teachers and students to becoming interested in and recep-

tive to Design Thinking and DFC. The themes of creating pauses and spaces, acknowledging individual differences and autonomy, and empowering the silenced self emerged as key to our ongoing involvement as teachers. The interpretation of (re)encounterings highlights the potential of Design Thinking to create more engaging, inclusive, and empowering learning experiences in the context of an exam-oriented education. Its implementation hinges on a variety of factors, including the prevailing school culture, the need to strike a balance with established curriculum, and the provision of appropriate professional development opportunities for teachers. By examining DFC implementation within an collaborative inquiry process and autobiographical reflection, important insights were gained about the potential of design thinking for growing innovative practices in teaching and learning.

Résumé

Cette recherche qualitative examine mes (re)rencontres avec le Design Thinking et le Design for Change (DFC). Le Design Thinking est une méthodologie de résolution de problèmes qui met l'accent sur l'empathie, l'expérimentation et l'itération afin de développer des solutions innovantes dans l'éducation, tandis que le Design for Change (DFC) est un mouvement mondial (inspiré du Design Thinking) qui encourage les enfants à identifier et à résoudre les problèmes de leur communauté grâce à ce processus de pensée structuré. J'ai été impliqué dans une facilitation DFC en Chine et des initiatives de Design Thinking en Inde et au Pérou. La prise de conscience de sa propre existence et l'expérience dans le moment présent sont au cœur du Design Thinking ; en tant que tel, l'approche implique une certaine forme de rencontre curriculaire de la part de l'étudiante ainsi que de l'enseignante. Dans ma recherche, je prends le point de vue de l'enseignante. La rencontre dans le titre de ma thèse met en évidence, tout d'abord, mes propres rencontres autobiographiques avec, ainsi que mes retours à ces moments clés vécus ; je les conceptualise comme des (re)rencontres. Ce processus est soutenu par la réflexion de huit autres participantes, dont la plupart sont devenus enseignantes. Mon étude se concentre sur les questions de recherche suivantes : Quels types d'insights et d'implications peuvent découler de l'analyse des expériences d'implémentation de DFC par les enseignantes en Chine? Quelles ont été mes propres expériences éducatives (en tant qu'étudiant et enseignant) au sein et avant ma participation au Design Thinking et au DFC ? Comment les (re)rencontres de moi-même et d'autres enseignants avec cette initiative ont-elles influencé notre développement et notre réflexion en tant qu'enseignants ? Comment le Design Thinking et le DFC peuvent-ils être liés à d'autres initiatives en éducation (par exemple, le processus d'enquête collaborative de New Pedagogies for Deep Learning (NPDL) ?

La recherche de cette thèse a combiné des méthodologies autobiographiques avec des méthodologies informées par les arts. L'écriture autobiographique, en s'appuyant sur la méthode du currere, a été utilisée pour réfléchir sur mes propres expériences passées en tant qu'étudiante et enseignante. Dans le cadre de l'analyse, la poésie trouvée a été utilisée pour distiller et se concentrer sur les (re)rencontres afin de mieux comprendre les nuances et les profondeurs. Des en-

tretiens ainsi que des techniques d'élucidation photographique ont été utilisés pour susciter la réflexion des 8 participants de Chine et de Taïwan. Les deux ensembles de données ont été analysés de manière thématique. Une conclusion majeure a été la pertinence de certains types de rencontres avec la famille, les enseignants et les élèves pour s'intéresser et être réceptifs au Design Thinking et au DFC. Les thèmes de la création de pauses et d'espaces, de la reconnaissance des différences individuelles et de l'autonomie, et de l'autonomisation du soi réprimé sont apparus comme clés pour notre engagement continu en tant qu'enseignants. L'interprétation des (re)rencontres met en évidence le potentiel du Design Thinking pour créer des expériences d'apprentissage plus captivantes, inclusives et valorisantes dans le contexte d'une éducation axée sur les examens. Sa mise en œuvre dépend d'une variété de facteurs, notamment la culture scolaire prédominante, la nécessité de trouver un équilibre avec les programmes établis et la fourniture d'opportunités de développement professionnel appropriées pour les enseignants. En examinant la mise en œuvre du DFC dans le cadre d'un processus d'enquête et de réflexion autobiographique et collaboratif, des informations importantes ont été obtenues sur le potentiel du design thinking pour développer des pratiques innovantes dans l'enseignement et l'apprentissage.

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Enormous thanks to my supervisor, Dr. Teresa Strong-Wilson, for encouraging me to embark on this re-encountering journey. Her resourcefulness, constructive feedback, and patience have been instrumental in helping me navigate the challenges and complexities of this research. Her expertise and mentorship have been invaluable, and I am grateful for the opportunity to have worked with her.

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I owe so much to my parents, who are the very definition of generosity and sacrifice. Thank you for cutting a path so that it might be easier for me to walk. Gracias to James and merci to Be, for having walked with me for a period of my life.

Dedication

To my beloved poets.

I Wish… Mu-Rong Xi

My beloved poet

It would not be my wish

Seeing you packed with groceries,

Trivial and blurred

What about becoming an Encyclopedia,

Feverishly surrounded by others?

Neither is it.

Beloved poet, my

You've got a whole life to live,

'Wild and precious'.

To grow, while blooming

To lose, while forming

Look how you stand and shine in the sun.

A pine tree, a cypress

Or

A fine wild lily,

Outgrown the rocky shore,

With the wind you…

我的願望　席慕容

不希望 我愛的詩人

最後成為一間面目模糊的

小雜貨鋪

也不希望他成為一本

眾人推崇的 百科全書

我只希望

他能依照生命的要求去成長

開自己的花

結自己的果

在陽光下

或者長成松 長成柏

或者長成一株

在高高的岩岸上 正隨風搖曳的

瘦削的野百合

List of Figures

List of Tables

Chapter One: Introduction

There is no better way to study curriculum than to study ourselves.
(*F. Michael Connelly & D. Jean Clandison, 1988, p.31*)

This qualitative study is designed to investigate my (re)encounter with Design Thinking and Design for Change. Design Thinking is a problem-solving methodology that emphasizes empathy, experimentation, and iteration so as to develop innovative solutions in education while Design for Change (DFC) is a global movement (inspired by Design Thinking) that encourages children to identify and solve problems in their communities through a structured design thinking process. The study investigates the impact of Design Thinking on my perception of becoming a teacher, and analyses teachers' personal interactions, emotions, and reflections on implementing Design Thinking and DFC in teaching. The study also explores the relationship between DFC and NPDL and concludes with insightful findings to guide future facilitation of these approaches to curriculum design.

It wasn't until I participated in the immersion program at Riverside School in India that I finally found a school or an education that impressed me every single day, of the two weeks I was there, opening a door for me to continue exploring myself in becoming a human and a teacher. I was born and raised in the city of Hangzhou, located in eastern China, prior to attending university in Taiwan and going on an internship trip in India. My educational journey spanned over 26 years, shaping who I am today, providing me with knowledge, skills, inspirations, friendships, precious memories, and a number of unsettling moments. This thesis has allowed me to revisit my own experiences as a student and address in a more autobiographical way lingering confusions that over the years, had been left unattended. For the better part of my student life, I have seen myself in the context of an exam-oriented education. I was the one who felt neglected by the biology teacher and who stopped raising questions in class or after class. I was the one whose academic performance was no longer deemed satisfactory. In high school, I was the one who would rather

play music with my bandmates or read English books or recite Chinese poems during the evening study period. I would rather do these things than spend time memorizing the text in the history book to get a higher score in the exam. While the teacher was lecturing about his belief that learning is a selfish and competitive process, I perceived myself wondering: is the purpose of attending school simply to prepare oneself for the next stage? If so, must this process be so arduous and marked by stressful competition? In my experience, exam-focused education and standardization were not designed to promote each student's flourishing, but rather to try to mold them into the same being, regardless of their own "one wild and precious life" (Oliver, 1990, p. 94).

My trip to India in 2016 expanded my imagination about education's possibilities. I witnessed students sharing their perspectives and voicing their doubts, feeling at ease in class, constructing their knowledge systems together. During their morning circle sessions, the teacher would collect the topics and questions that students wanted to explore during the semester, prepare pertinent learning materials and lead discussions. I also saw English and Science teachers collaborating on a lesson plan on perfume and poetry appreciation. Additionally, I observed diverse forms of evaluation beyond traditional exams, including process evaluation and portfolio assessment. Students were also supported to do a Design For Change (DFC) challenge, striving to solve real problems in their lives. In other words, I saw for real how "education is not preparation for life; education is life itself" (Dewey, 1916, p. 239).

I did not realize the impact of the inspiration and impact that my educational journey would have on me. After my long detour, I returned to China, where despite my disenchantment with education in China, I nevertheless decided to work in the education field and be with children. It was when I had the opportunity to lead children in doing the DFC challenge, that I realized that since the seeds had been planted in me of that educational ideal in India in 2016, Design Thinking had been silently influencing me.

Connecting the dots and coming to the stage

You can't connect the dots looking forward;
you can only connect them looking backward.
So you have to trust that the dots will somehow connect in your future.
You have to trust in something — your gut, destiny, life, karma, whatever.
(Steve Jobs, 2005)

Looking back, I have collected several 'dots' in my encounters with Design Thinking in education (see Table 1). These encounters span over seven years and five jurisdictions: Taiwan, India, Peru, China, and Canada. Table 1 provides a detailed description of my roles in each encounter, such as being a student, intern, academic assistant, art teacher, kindergarten teacher, and educator. The table also highlights the different types of activities and experiences in which I engaged during these encounters, including attending workshops, translating articles and subtitles, designing and teaching art classes and leadership workshops, and carrying out Design for Change challenges with young children.

Table 1: My Encounters with Design Thinking in Education

Time Period	Jurisdiction	Position	Description of Position
July 2016 - August 2016	India	Student, intern	Participated in an immersion program. Observed teaching practice in classes. Attended teacher development workshops.
September 2017 - July 2020	Taiwan	Translation volunteer (online)	Translated articles and subtitles of various Design for Change Taiwan videos on topics such as disaster prevention, desk redesign, and community building.

March 2019 - September 2019	Peru	Academic assistant, art teacher	Designed and taught art classes and leadership workshops to children
August 2020 - December 2021	China	Kindergarten teacher	Carried out a Design for Change challenge with 5-year-old children
January 2023 - April 2023	Canada	Educator	Designed and conducted a fundraising project with Homeschooling children between the ages of five and twelve.

My first encounter with design thinking dates back to a one-month summer internship in India six years ago. Guided by my university professor, I joined two other interns in an immersion program at Riverside School, which had incorporated design thinking into school culture, teachers' professional development and students' project-based learning. The Design for Change (DFC) Challenge was a prominent part of the program. Swinging especially, at that time, really stood out for me because it made time slow down. The slowness of swinging aided me in the journey from head to the heart, allowing me to access a deeper level of awareness and understanding.

That was a four-story residence with white walls, and my favorite part was the ubiquitous swings: the finely crafted double swing chair facing the TV in the living room, the half egg- shaped single swing on the third floor outside the study, and various swings on other residents' balconies that could be seen from the rooftop. I couldn't resist sitting on one of them and swinging back and forth, recalling local people who would occasionally sway their heads left and right, just like my own head would sway unconsciously. (Excerpt from my internship journal at the Riverside School in India in 2017)

Following the internship, I continued to stay involved with DFC, volunteering with DFC Taiwan for three years, where I got to know numerous DFC stories and how children were making changes and impacting their lives, this while I was translating documents, videos, and providing interpretation services for conferences. I volunteered because the children were in need and I made the decision to help, but each of those stories was like a seed planted in my heart during my early exposure to Design Thinking through my lived experiences in India and Taiwan. After graduating from university, I worked as an academic assistant in an education NGO in Peru, establishing an evaluation process, supporting international volunteers and teaching five English classes per week to children aged from 5 to 18. Due to the high turnover rate of teachers within the organization and despite my lack of prior experience, I also took on the role of an art teacher. That was a period when I devoted my heart and soul to designing, teaching and learning. I really saw my creativity thrive. Upon returning to China, I worked as a bilingual teacher in an international kindergarten in Beijing for a year and a half. Working five days a week for eight hours a day with children was a transformative experience and a unique opportunity to observe and interact with young learners, allowing me to see first-hand the ways in which they approached and interacted with the world. The kindergarten was also interested in promoting the DFC Challenge, therefore I had the opportunity to contribute my part to this initiative by introducing the curriculum to my colleagues and facilitating the DFC Challenge with the group of children that I was working with. I also saw DFC Challenges being approached in different ways among other teachers and their students.

During my time in Montreal while I was undertaking this master thesis, I have had the opportunity to work three days a week for six weeks with a group of 22 homeschooled children ranging in age from 5 to 12 years old, doing our DFC challenge. It was a unique and challenging experience, as the class size was larger than what I was used to, and the children had significant age differences among them. As part of the team of educators, we had to work together to ensure that each child received personalized attention and support. We also had to consider the designated topic we were working on and how to engage the children in meaningful discussions and activities that were both age-appropriate and intellectually stimulating.

Research questions

During my own (re)encounters with Design Thinking in Education and in particular Design For Change, there have been moments of amazement, wonder, confusion, frustration and accomplishment along with self-imposed exile. Here, with my thesis research, comes the point where I feel obliged to make a pause, walk myself through design thinking again, to re-feel and re-imagine, motivated by my belief that when teachers find their voice, they can help students find their voices. The following research questions informed this study:

1. What have been my own educational experiences (as student and teacher) within and leading up to my participation in design thinking and Design for Change?
2. What kinds of insights and implications can arise through analyzing teachers' implementation experiences of Design for Change in China?
3. What insights can we get when we analyze teachers' implementation experiences of Design for Change in China with the collaborative inquiry process of New Pedagogies for Deep Learning?

I identify myself as a cisgendered, Asian woman teacher and researcher in education. Ontologically, I am a social constructivist (Vygotsky, 1978); in social constructivism, knowledge is socially constructed and context-dependent, and there is no single reality. Epistemologically, I draw from empiricism and pragmatist perspectives (Dewey, 1938), whereby true knowledge is primarily founded on input from our senses and it is crucial to refer to experience and observations when justifying beliefs and claims. I believe that by discussing my research philosophy, I become more aware of the assumptions and biases brought into this research so as to be accountable throughout. My research helps me to engage in deep reflection so as to understand my practice more fully and better inform future teaching and research.

Overview

Chapter One has introduced the study, its questions and my motivations and educational journey.

Chapter Two delves into the pertinent research literature related to the integration of Design Thinking and Design for Change in teaching and learning, which includes both theoretical and empirical studies. I also incorporate New Pedagogies for Deep Learning (NPDL) and its four-layered deep learning framework and discuss why I specifically choose a collaborative inquiry process as the theoretical basis for this study. The aim is to establish a conceptual framework, identify gaps in existing research, and provide a useful perspective for my own research.

Chapter Three presents the theory of *currere* and its intricate relationship with subjective recon-struction and reconceptualizing curriculum design. The concept of encountering curriculum is discussed through the lenses of spaces, plurality, intensities, and charges, together with concep-tualization of "re-encountering" as a central theme undergirding this study. The chapter also in-corporates the New Pedagogies for Deep Learning (NPDL) framework, where the four layers of its deep learning framework are further explored with links to *currere*, encountering, and re-en-countering.

Chapter Four provides a comprehensive overview of the methodological theories and approaches used in the study. This includes a detailed description of the various qualitative field texts and data sources that were produced through the use of both autobiographical inquiry and arts-based research methods. The data collection process involved several stages, such as autobiographical writing, recruiting participants, conducting interviews with photo elicitation techniques, produc-ing transcripts, related ethical considerations and analyzing the data using both poetic inquiry and thematic analysis.

In Chapter Five, I share my personal experiences with Design Thinking in education. I use auto-biographical writings to recount these experiences, drawing from sources such as journals and photos to jog my memory. To facilitate the reflective process, I employ Pinar's (2015) *currere*

method. This part helps to answer my first research question: What have been my own educational experiences (as student and teacher) within and leading up to my participation in Design Thinking and Design for Change? Conducting this autobiographical inquiry allowed me to situate my personal experiences in relation to Design Thinking.

Chapter Six shares the found poetry emerging from my autobiographical inquiry and reflections on key moments in my educational journey, weaving with the four lenses of encountering curriculum: spaces, plurality, intensities and charges (Strong-Wilson et al., 2019). Throughout this process, three significant themes emerged, resonating not only with my own experiences but also those of my participants, derived from analysis of interview transcripts with the participants. This chapter continues to address the first research question, What have been my own educational experiences (as student and teacher) within and leading up to my participation in Design Thinking and Design for Change?, even as it takes up the second research question: What kind of implications emerged from the process of teachers' facilitation of Design for Change (DFC) in the kindergarten in China?

Chapter Seven focuses on revisiting the gathered data, providing a concise overview of the findings that have emerged from the analysis conducted and answering the last research question: What insights can we get when we analyze teachers' implementation experiences of Design for Change in China with the collaborative inquiry process of New Pedagogies for Deep Learning? Furthermore, an exploration of the study's limitations is undertaken and the implications of the study are also delved into, considering the potential impact and significance of the findings within the broader context of education and teaching practices. The chapter concludes with the author's final reflections and thoughts.

Chapter Two: Literature Review

A literature review plays a crucial role in the research process, providing a solid foundation for the study, informing the research design, and supporting the interpretation of the findings. This chapter explores the use of Design Thinking and Design For Change (DFC), examining its interplay and correlation with Deep Learning, another curricular approach in education. This chapter endeavors to eloquently illuminate the synergistic relationship among these approaches, shedding light on how they can be harnessed collectively to foster transformative and profound educational experiences. Despite the growing research on design thinking and DFC in education, lacking are teachers' voices. One purpose of this thesis is to amend this gap.

Design Thinking in Education

We cannot solve our problems with the same thinking we used when we created them.

(Albert Einstein)

This section provides an overview of design thinking and related research and educational theories. It relates the use of Design Thinking in education, Design For Change in particular, to an analogous curricular approach in education called Deep Learning, as Design Thinking is a form of deep thinking and learning.

Design thinking is a problem-solving approach to finding solutions in ways that meet the needs of users; its approach relies on iterative trial and error that emphasizes empathy, experimentation, and collaboration (Cross, 2001; Lockwood, 2010). Many industrial and commercial activities have become inextricably linked to design thinking, that is, to seeking out users' or stakeholders' needs, generating and testing multiple ideas through iterative prototyping, and using feedback to refine and improve solutions (Yee & Zimmerman, 2012). Design thinking is distinguished by a creative and iterative process that values different points of view and encourages collaboration

and experimentation (Boyle et al., 2019). It is increasingly being recognised as a valuable approach for driving innovation, in part because it can be applied to a wide range of complex challenges, from product design to organisational change (Kolko, 2015).

In *Taking Design Thinking To School: How the Technology of Design Can Transform Teachers, Learners, and Classrooms*, Goldman and Kabayadando (2017) define Design Thinking in this way: "a method of problem-solving that relies on a complex of skills, processes, and mindsets that help people generate novel solutions to problems" (p. 3). They argue that design thinking can help to transform education by promoting a more student-centered, collaborative, and creative approach to learning.

One of the models of Design Thinking, originally created by the Hasso Plattner School of Design at Stanford University, elaborates five steps: Empathize, Define, Ideate, Prototype, and Test (Camacho, 2016) (see Figure 1.1). These steps have influenced approaches in education inspired by design thinking, spawning new initiatives.

Figure 1.1: Design Thinking Process (Hasso-Plattner Institute of Design, University of Stanford)

As applied to education, Design thinking is rooted in a constructivist view of learning, that is, it emphasizes the active construction of knowledge by the learner. On this view, learners are not

passive recipients of information, but active participants in the learning process. Learners construct their own understanding of the world through active interactions with their environment and other learners. Educational theorists such as John Dewey, Maria Montessori, Lev Vygotsky, and Paulo Freire espoused constructivist views—and their main ideas can be considered consistent with design thinking. Giving students the chance to do something while studying is a motivating form of learning-by-doing, as Montessori (1914) suggested; design thinking is grounded in practical, hands-on activities on the part of the learner. Dewey (1916) argued that, while experiencing the world, complicated issues or real-life difficulties ought to comprise the crux of learning. Design Thinking entails actively tackling issues by interacting with and transforming the world. Deep partnerships and teamwork are required for Design Thinking, and crucial to the learning environment are possibilities for interaction, as Vygotsky (1986) also believed. Freire (1968) argued for liberation education which is closely related to making a better world and reorganizing social and community structures; Design Thinking is premised on these same goals. The combined implication of the thinking of these four thought leaders is that when confronted with a compelling, relevant and real problem-focused learning environment, student agency comes into play in the form of a desire to learn, create and solve problems.

Design thinking is also informed by principles of human-centered design, which emphasize the importance of understanding the needs and perspectives of users. This approach is particularly relevant in the context of education, where learners are the primary users of the educational system. By taking a user-centered approach, design thinking encourages educators to focus on the needs and interests of learners, rather than the transmission of information.

The emergence of new technologies like ChatGPT has prompted us to reflect more deeply on what it means to be human and how we can prepare children for the future. There is growing empirical evidence for the effectiveness of design thinking in education as a human response to this situation. Studies have shown that design thinking can improve student engagement, motivation, and learning outcomes in a variety of contexts. For example, Mehta and Fine (2019) found that design thinking enhanced students' problem-solving skills and creativity in a high school

STEM class. Research has also shown that Design Thinking can have a positive impact on the emotional well-being of students. Pacheco-Torgal and colleagues (2021) noted that design thinking improved the self-esteem and self-efficacy of students in a university course. This finding is particularly important in the context of education, where emotional well-being is closely linked to academic success. In addition, evidence suggests that design thinking can promote equity and inclusion in education. A study by Desai and colleagues (2019) found that design thinking helped to overcome cultural barriers to learning, particularly in contexts where students come from diverse cultural backgrounds. This suggests that design thinking can be an effective approach to promoting diversity and inclusion in education, which is increasingly important in today's globalized world.

To conclude, through fostering creativity, collaboration, and empathy, design thinking promises to equip students with the skills necessary to confront the challenges of the 21st century. The theoretical basis of design thinking in education, as well as its proven effectiveness, provide compelling reasons for its widespread adoption in schools and universities. It is therefore no surprise that Design Thinking has given rise in education to several on-the-ground initiatives. The one in which I was involved, and in which I first encountered Design Thinking, was Design For Change.

Design for Change

Design for Change (DFC) is an educational innovation first launched in 2009 by Kiran Bir Sethi, the principal of Riverside School in Ahmedabad in India. Sethi was motivated by the belief that children play an important role in shaping the world. By giving children an opportunity to express and then implement their innovative ideas, they can take action toward a more desirable and sustainable future (Khushu, 2011). In DFC, the five steps of Stanford's Hasso Plattner School of Design, those of Empathize, Define, Ideate, Prototype, and Test, became: Feel, Imagine, Do, and Share (FIDS) (See Figure 1.2). DFC has now become a global movement that en-

courages children to identify and solve problems in their communities through a structured design thinking process. Design For Change Taiwan, inspired by Design For Change India and founded in 2012, was one of the organizations I worked with before and during my internship in Riverside School in India (See Fig. 1.2).

Figure 1.2: From Design Thinking to Design for Change

Source: Design For Change Taiwan

"Feel" is to encourage children to think of an issue that bothers them personally, to identify the root cause of the issue, and to understand the issue from all possible perspectives, which may include interviews with users. "Imagine" concerns brainstorming and visualizing innovative and original solutions to the chosen challenge, while reflecting on the input of the users, and selecting the most adequate solutions to implement. "Do" entails to roll up one's sleeves, go out into the real world, and put ideas into action, together with effective planning, execution, and reflection. Finally, "Share" is to share the whole process, known as "challenge stories," with a wider

audience. To better elaborate the FIDS process, Design For Change World, the headquarters in India has created a toolkit, listing the key steps (see Figure 1.3).

Figure 1.3: FIDS one-week toolkit

Source: Design For Change World

During 2009, in the first year of its foundation, 700 challenge stories were collected. In 2010, the DFC began to expand internationally. It received over 1,500 challenge stories from around the world with the support of international partners. According to its official website's statistics, since 2010, the DFC initiative has reached 65 nations and accumulated 18,420 challenge stories of change (Design for Change, n.d.).

The impact of the DFC initiative on students, teachers, and parents was then assessed by Evaldesign in Tamil Nadu in 2015 utilising a comprehensive case study analysis that employed a maximum variation sampling technique. Evaldesign is an innovative Education Research Consulting firm established in 2013, specializing in the creation and evaluation of educational programs. By applying their expertise in research and program design, they can empower DFC initiatives to

capture and leverage meaningful data that enables continuous improvement and evidence-based decision-making. Their study clearly demonstrated that the DFC initiative significantly affected all stakeholders, leading to a sustainable and positive change in society, including a higher degree of creativity, attitude improvement, greater teacher involvement, positive parental perceptions, changes in community behaviour, and sustainable positive change.

According to research on the impact of Design For Change conducted by The Good Project at Harvard's Graduate School of Education (2009 - 2012), 94% of DFC initiatives bring positive impact on students, 90% contribute to the community, and 65% help boost student potential (The Good Project, 2012). They found that DFC initiatives facilitated students' learning to cooperate with others and organize information and resources, along with developing students' empathic thinking, problem-solving skills, and self-confidence; also, improved academic performance was also an outcome (Easley et al., 2012). A follow-up evaluation by The Good Project further demonstrated that DFC classroom processes can increase students' individual and group empathic abilities. Every sub-skill under empathy showed a statistically significant shift, including choosing problems that affect others, describing multiple viewpoints, and keeping the stakeholder in the center of designed solutions (Easley et al., 2015). The Good Project is a research initiative housed within Project Zero, a renowned research center dedicated to advancing the understanding of learning, thinking, and creativity at the Harvard Graduate School of Education.

Another study was carried out by Synlab (2018), a non-profit organization which supports teachers, administrators, and trainers in developing their potential so that they have the tools and training they need to collectively drive educational transition in 2018. They sampled 159 students to examine whether involvement in a DFC initiative increased students' confidence in their ability to succeed in school. The self-efficacy of participating students was found to rise by 11%, and tied to generating a strong and resilient sense of personal effectiveness at school.

Despite growing recognition of the importance of developing design competencies in students, there is a general lack of systematic research in Design Thinking as applied to the field of teacher

preparation (Koh et al., 2015). Having talked to practitioners who are trying to integrate design thinking or DFC in education in Beijing, Taiwan and Québec, I came to the realization that putting Design Thinking into practice is not as straight-forward and easy as it may seem. Given the fact that the FIDS process can be adapted to almost any local context and that my own study focuses mainly on the perspectives of teachers in China, I here summarize the combined learnings suggested by DFC China and DFC India (where DFC first came into being) (see Table 2).

Table 2: FIDS process

Step	Possible steps (DFC China)	What is it about? (DFC India)	Learning goals (DFC India)
Feel	Observe what's bothering you. What change do you want to see? Vote Engage the users, try to find the root cause	Slow down and understand the situation before jumping in to solve it immediately.	Empathy and Communication
Imagine	Brainstorming possible solutions, build on others' ideas Vote the most feasible solution(s)	Brainstorm solutions to improve, enrich, change the user experience.	Creativity
Do	Plan on resources, budget, people, time. Implement and then Reflect	Use creative agency and an ability to take timely action.	Critical thinking and Leadership

Share	Share your story Inspire more people	Share, cultivating an abundance mentality.	Practice elevation: the shift from competing with others to completing others.

It is crucial to examine the journeys that practitioners have taken: inspiring moments of teaching and learning, difficulties they encountered, lessons they learned. Based on the conversations I had with practitioners who tried to integrate DFC into their teaching, they faced certain challenges in organizing and managing activities as well as cultivating the competencies required to carry out such activities and changing learners' attitudes. How to make sure children feel safe to voice themselves was a major concern. By exploring the perspectives of teachers on design thinking in teaching and Design For Change and giving voice to individual teachers, my study aims to provide a more comprehensive understanding of the implementation process of design thinking in education.

While design thinking in education is new, it strikes a chord with related curricular approaches, like New Pedagogies for Deep Learning (NPDL).

New Pedagogies for Deep Learning (NPDL)

New Pedagogies for Deep Learning (NPDL) arose out of a global partnership of educators, researchers, and policymakers working together to transform education and prepare students for the demands of the 21st century (NPDL Global Partnership., n.d.). The initiative aimed to sup-

port schools and systems in adopting innovative and student-centered teaching and learning approaches that promote deep learning. They defined "deep learning" as "the process of acquiring six global competencies: character, citizenship, collaboration, communication, creativity, and critical thinking" (Fullan et al., 2018, p.16). These competencies, which represent a set of multi-layered capacities that combine knowledge, skills and attitudes about self and others, also include compassion, empathy, socio-emotional learning, entrepreneurialism, and other skills necessary for thriving in a multifaceted world. NPDL aims to empower learners to succeed in a rapidly changing world by developing their ability to think critically and apply their knowledge to new situations. Ultimately, NPDL seeks to create a learning environment that prepares students for the complexities and challenges of the future (Fullan et al., 2018).

To support the implementation of these goals, NPDL's deep learning framework provides a comprehensive set of tools and processes for educators to use in their classrooms. The framework includes a range of resources, such as professional learning modules, rubrics, and assessment tools, to help teachers create more engaging and effective learning experiences for their students. The four layers of the framework serve as circles of support (see Figure 2.1). The first layer focuses on intended learning outcomes, which include character development, citizenship, collaboration, communication, creativity, and critical thinking. The second layer is designed to develop instructional experiences that achieve these outcomes through four elements of learning design, which are pedagogical practices, learning partnerships, learning environments, and leveraging digital (details in chapter three). The third layer provides conditions for deep learning, and includes rubrics that support schools, districts, and systems in fostering deep learning. The final layer is collaborative inquiry, which involves engaging with colleagues to examine existing practices and assumptions and to promote ongoing learning and improvement (Fullan et al., 2018).

Figure 2.1: Deep Learning Framework

Source: New Pedagogies for Deep Learning, 2014

The initiative has been shown to improve student engagement, critical thinking skills, and academic achievement (Fullan et al., 2018). NPDL has also led to positive changes in teacher professional development, with educators reporting increased collaboration, support, and improved teaching practices (Fullan et al., 2018). Furthermore, NPDL has been successful in creating a global community of educators, researchers, and policymakers who are working together to transform education and prepare students for the demands of the 21st century (New Pedagogies for Deep Learning, n.d.).

Based on the fact that the learning objectives and learning experiences of both initiatives overlap and complement each other, and that NPDL has created a deep learning framework supported by a range of adaptable tools and processes that offer practical ways to change teaching practices (Fullan et al., 2018), I use NPDL in this thesis as a counterpoint for further reflecting on teachers' descriptions and reflections on DFC, this in order to gain a deeper understanding of such initiatives and provide suggestions for improvement.

Design thinking, with its emphasis on empathy, collaboration, and experimentation, aligns with deep learning's goal of developing learners' global competencies such as creativity, critical thinking, and collaboration. Both approaches prioritize active engagement and iterative processes that encourage students to generate innovative solutions and apply them in real-world contexts. Deep learning recognizes design thinking as a form of deep thinking and learning, highlighting its value in cultivating learners' abilities to address complex challenges. Design thinking in education is rooted in a constructivist view of learning, which aligns with deep learning's emphasis on active knowledge construction by the learner. Both approaches acknowledge the importance of hands-on, practical activities that enable students to interact with and transform their environment. They promote a student-centered, collaborative, and experiential approach to learning that values different perspectives and encourages interdisciplinary thinking. Design thinking's focus on problem-solving and innovation resonates with deep learning's aim of fostering creativity and encouraging learners to engage in the process of iterative prototyping and testing. Both approaches also recognize the role of digital tools and technologies in accelerating and deepening the learning process.

DFC is an approach that empowers students to identify and address real-world problems or challenges through a design thinking framework. It encourages students to think critically, analyze information, and apply their knowledge and skills to develop innovative solutions (Khushu, 2011). By engaging in the DFC process, students are encouraged to use advanced cognitive pro-

cesses such as problem-solving, creative thinking, and decision-making. Moreover, DFC fosters profound comprehension by immersing students in authentic learning experiences that require them to understand complex issues from multiple perspectives. Through research, analysis, and empathy, students gain a deep understanding of the subject matter and the underlying challenges they aim to address. This comprehensive understanding enables them to design effective solutions that consider the complexities and nuances of the problem at hand. Additionally, tackling real-world problems or challenges often require a multidisciplinary approach. By engaging with interdisciplinary topics, students have the opportunity to explore and integrate knowledge and skills from various academic disciplines. By involving students in the entire process, DFC ensures that the learning experiences are genuine and relevant to their lives. Lastly, DFC aligns with the aim of making a positive impact on the local or global scale. The projects undertaken in DFC often have a focus on creating positive change and addressing social or environmental issues. Students are encouraged to consider the broader implications of their solutions and how they can contribute to a better world. With the increasing emphasis on digital tools and connectivity, DFC leverages these resources to expand the reach and impact of students' projects.

The compatibility between Design For Change (DFC) and New Pedagogies for Deep Learning (NPDL) lies in their shared intended outcomes. Deep Learning is a process of acquiring six global competencies: character, citizenship, collaboration, communication, creativity, and critical thinking (see Figure 2.2). The learning goals of DFC have been distilled to: empathy, communication, creativity, critical thinking, leadership, and elevation (the shift from competing with others to completing others). Like DFC, NPDL does not define its learning goals in detail. Both initiatives value communication, creativity, and critical thinking so avoid being overly prescriptive. Within NPDL, empathy is included as part of citizenship—as it is in DFC. NPDL's descriptions of collaboration like "managing team dynamics and challenges" and "contributing to the learning of others", together with "responsibility" and "resilience" in character, also relate to leadership in DFC. The idea of "completing others" in DFC embraces the concept of "concern for others" and "thinking like global citizens" of citizenship in NPDL. Lastly, we can connect some detailed description in NPDL like "asking the right inquiry questions", and "taking action on ideas in the

real world" to the DFC process. In short, both approaches are different versions of deep learning. Design thinking can be utilized for individual endeavors, targeted issues, or comprehensive undertakings within organizations. It offers a versatile approach that can be embraced by individuals, teams, or entire organizations. In contrast, the New Pedagogies for Deep Learning (NPDL) framework is designed to bring about a transformative shift in teaching and learning practices on a broader scale. It aims to foster systemic change across educational systems, encouraging a holistic approach to pedagogy that benefits a larger community of learners.

Figure 2.2: Defining the Six Global Competencies for Deep Learning

Character
- Learning to learn
- Grit, tenacity, perseverance, and resilience
- Self-regulation, responsibility, and integrity

Citizenship
- Thinking like global citizens
- Considering global issues based on a deep understanding of diverse values and worldviews
- Genuine interest and ability to solve ambiguous and complex real-world problems that impact human and environmental sustainability
- Compassion, empathy, and concern for others

Collaboration
- Working interdependently and synergistically in teams
- Interpersonal and team-related skills
- Social, emotional, and intercultural skills
- Managing team dynamics and challenges
- Learning from and contributing to the learning of others

Communication
- Communicating effectively with a variety of styles, modes, and tools including digital
- Communication designed for different audiences
- Reflection on and use of the process of learning to improve communication

Creativity
- Having an "entrepreneurial eye" for economic and social opportunities
- Asking the right inquiry questions
- Considering and pursuing novel ideas and solutions
- Leadership to turn ideas into action

Critical Thinking
- Evaluating information and arguments
- Making connections and identifying patterns
- Problem solving
- Constructing meaningful knowledge
- Experimenting, reflecting, and taking action on ideas in the real world

Source: New Pedagogies for Deep Learning, 2014

My research is guided by two theoretical frameworks - the theory of *currere* and deep approaches to learning. Using the theory of *currere*, I seek to explore the key moments in my life that have motivated me to promote Design Thinking and Design For Change in education. Through this exploration, I shed light on the intertwined resonances among experiences that are important to me, and identify how they have influenced my engagement and support in Design Thinking in education as an adult. Through the lens of a Deep Learning Framework, the collaborative inquiry process in particular, I was able to investigate how teachers personally interact with, feel about, and reflect on the implementation of Design Thinking and Design For Change in schools. My goal in this thesis is to gain insights that can inform future facilitation of Design Thinking and Design For Change in education.

Chapter Three: Theoretical Framework

In this chapter, I begin by exploring the theory of *currere*, its relationship with subjective reconstruction and reconceptualizing curriculum design. Then, I discuss the concept of encountering curriculum and conceptualize "re-encountering", which serves as the central theme of this study. I then layer into this discussion New Pedagogies for Deep Learning (NPDL), reviewing the four layers of its deep learning framework and explain why I have chosen a collaborative inquiry process as the theoretical basis for analyzing teachers' experiences in implementing Design Thinking and Design for Change in education.

Theory of *Currere*

My research interest focuses on the lived experiences of teachers who have integrated Design Thinking or Design for Change (DFC) into their educational practice or curriculum. This interest is rooted in my own experiences as a student and teacher who has worked with Design Thinking. During my studies at McGill University, while reflecting on my experiences in learning and working in kindergartens, I realized my passion for integrating Design Thinking into education. As Pinar and Grumet (2015) suggest, while curriculum, instruction, and objectives remain important in the educational process, it is essential to shift our focus inward and engage in a systematic exploration of our inner experiences to gain a deeper understanding of their role in the educational process, provoking encounters with ourselves through the arts and being roused to "wide-awakeness" (Greene, 1978, p. 42).

According to Pinar (2012), the term curriculum has its origins in the Latin word *currere*, which means to run the course. Curriculum is static, while *currere* is dynamic. In contrast to intended learning outcomes and fixed plans, *currere* values the ongoing lived experience of both students and teachers and regards individuals as "particular person with thoughts, feelings, desires, interests, dreams" (Strong-Wilson et al., 2023, p. 5), as "informed by those who have preceded them, those in their midst now, and those yet to come" (Pinar, 2012, p.7) and who evolve while living through one's life. Pinar's (2012) concept of curriculum as a complicated conversation emphasizes the importance of viewing education as an ongoing process of communication and experi-

ence, rather than as a static set of knowledge or skills that can be standardized and tested. *Currere* highlights the interconnectedness of learning experiences and recognizes that meaningful learning can occur both inside and outside of the traditional classroom setting, in a variety of contexts and through a variety of experiences. As described by Pinar (2012), this approach places an emphasis on learners' reflecting on their educational experience to explore the connections between their academic knowledge, personal history, self-awareness, and social development. *Currere,* as a methodology (discussed in more detail in the next chapter), allows individuals to step back from their daily institutional routines and engage in introspection and reflection on their inner selves (Pinar, 2011). By engaging in autobiographical reflection, individuals are able to gain fresh insights into their educational experiences, considering the various intersections of society, culture, history, gender, and race. Such insights can lead to a deeper understanding of oneself and enable individuals to distinguish their personal interests from public interest even as they can explore how these two—the personal and the public—intersect (Pinar, 2011). With an emphasis on how DFC as a curriculum has been understood, encountered, and experienced, my thesis research prioritises the viewpoints of insiders. For my part, I write autobiographically, recount my experiences, and create artful responses so as to connect curriculum with educational experience, theory with practice.

Pinar (2012) also suggests that *currere* is a way of reconceptualizing curriculum design. Rather than focusing on predetermined objectives or standardized testing, *currere* encourages educators to create curricula that are responsive to the needs and interests of individual students. By emphasizing personal meaning-making and critical reflection in curriculum design, educators can help students to see themselves as active agents in shaping their own lives and communities. Meanwhile, Pinar stresses the need for a curriculum that builds on the diverse experiences that students bring to the classroom and situates learning in the broader social and cultural contexts that shape students' lives. This approach seeks to use students' experiences as a foundation for learning. Similarly, Grumet (1993) advocates for a curriculum that is inclusive. She contends that a curriculum that values diversity and social justice can help students develop a more nuanced

and critical understanding of their surroundings. In doing so, students can develop the skills and dispositions necessary for promoting equity and justice in society.

Pinar (2012) also posits that curriculum should be perceived as a dynamic, fluid entity that continuously adapts and transforms in response to the experiences of its participants. Analogous to this, in a volume that explores the intersections of curricular and architectural design (Strong-Wilson, Castro, Crichlow and Yoder, 2023), Finnish architect and architectural theorist Juhani Pallasmaa is introduced. Similar to Pinar, Pallasmaa (2012) argues that the concept of design does not consist in a technical plan but is an experience: a multisensory and holistic one. He emphasizes the importance of designing spaces and structures that engage all of the senses, including touch, smell, taste, and sound, in addition to sight (where the emphasis typically falls). Pallasmaa suggests, too, that architecture that focuses solely on visual aesthetics ignores the lived experience of the body in space; creating meaningful and functional environments is respectful of the entire bodily experience. Consistent with *currere*, Pallasmaa advocates for a more human-centered approach to design that prioritizes sensory experiences and encourages a deeper connection between people and their surroundings.

My study, entitled "(Re)encountering Design Thinking in Teaching," employs the theory of *currere* to gain insights from the lived experiences of myself, the researcher, as a student and teacher, as well as of fellow interns at Riverside School and teachers in China. In keeping with *currere*, and in to prioritize the viewpoints of insiders, as well as understand personal interactions, emotions, and understandings surrounding the implementation and facilitation of Design Thinking and DFC in education, I emphasize the importance of encountering, and re-encountering.

Encountering

The concept of encountering is central to this study. Encountering involves being conscious of one's own existence and experiencing the present moment with immediacy and vitality. Encounters often begin with a moment of heightened interest or perceived significance, which Sebald described as coincidences. Sebald acknowledged that while we may be inclined to dismiss such feelings as irrelevant or bizarre, they actually carry a deeper meaning that we should not disregard (Sebald, as cited in Piet de Moor, 2011). By following these intuitive prompts, we demonstrate a genuine concern and become aware of the self in a more fluid and introspective manner. To have an encounter is to create an opportunity to transcend our own preconceptions and become aware of someone or something that is different from ourselves; this marks a moment of possibility, where we can expand our consciousness beyond our own perspective (Strong-Wilson et al., 2019). Strong-Wilson (2021) elaborates, drawing on Benjamin and Proust, that during the process of encountering, the complex interplay among consciousness, memory and the role of chance in accessing and engaging with different types of memories are highlighted. Benjamin (2007) emphasizes that memory fragments are often most potent and enduring when they are not consciously experienced but rather stem from incidents that never entered consciousness. This aligns with Proust's concept of involuntary memory, which is distinct from voluntary memory. Voluntary memory serves the intellect and consciousness, allowing memories to be consciously recalled. In contrast, involuntary memory resides in a past that is not directly accessible, often triggered by objects or sensory stimuli. Proust contends that "it is a matter of chance whether we come upon it [the object/memory] before we die or whether we never encounter it" (Benjamin sited in Strong-Wilson, p. 158). Benjamin also believed that powerful memories were often destroyed, forgotten, or repressed. However, Benjamin saw art as having the potential to induce a "shock experience" (p. 176) or "shock factor" (p.163) that disrupts conventional thinking and generates tensions. The shock emerges from constellations of impressions that do not neatly fit together, giving rise to an ethical self-encounter as conceptualized by Strong-Wilson (2021). This encounter challenges preconceived notions of reality and offers an alternative way of perceiving and understanding the familiar. Encountering moments of vulnerability and ambiguity, which are with sensations that are deeply felt and embodied, can provide us with a valuable occasion for gaining insight into and developing a deeper connection with the social and ideological influ-

ences that shape the lifeworlds of others (Grumet, 2015a). Maxine Greene (1975) emphasizes the importance of being authentic and fully present in our interactions with curriculum, recognizing that we bring our imperfect selves to the table. There needs to be a willingness to take risks, make choices, and arrive at decisions without necessarily expecting to arrive at a definitive or "right" answer. Ultimately, this mindset allows for a deeper and more meaningful engagement with the complexities of curriculum and the learning process, opening the possibility for creating an environment that fosters understanding of curriculum as a dynamic, multifaceted system that offers abundant opportunities for growth and connection.

In *Provoking Curriculum Encounters Across Educational Experience*, Strong-Wilson et al. (2019) elaborate on the idea of provocation in encounters in education using the lenses of spaces, plurality, intensities, and charges. The lens of "Spaces" encompasses not only the physical, social, and cultural contexts in which educational experiences take place, but also the multiple potential ways in life that these spaces can frame and mediate. As Judson (2006) points out, spaces offer a range of possibilities for design, which makes this lens useful to apply to design thinking in education. As place-makers, we navigate and shape spaces through our interactions with them, creating an intricate web of interrelations that influences our educational experiences. The lens of "plurality" refers to a mindset or approach that involves recognizing and respecting the diversity of perspectives, experiences, and ways of being in the world. According to Hans-George Gadamer (1998), this entails being open to what is other. Such an attitude of openness and receptivity is important because it allows us to engage in meaningful dialogue and exchange with others, becoming "a form of radical participation in the world," as Richardson (2019) suggests. Plurality resonates well with the purpose of design thinking in education. The lens of "intensities" explores the emotional and affective dimensions of educational experiences and how they shape learning and curriculum. While emphasizing the importance of recognizing and engaging with these affective moments in educational contexts, the editors suggest that by *experiencing experiences* (Pinar, 2015), *as* they unfold, educators and learners can develop a deeper and more nuanced understanding of themselves and the world. Such a lens ties in closely with the depth of experience that design thinking seeks to evoke. Last but not least, the lens of "charges" allows

for exploring intricate notions that are frequently incompletely comprehended until their impacts are shown. By acknowledging and engaging with these charges, educators can gain a deeper understanding of the hidden influences at play, thus potentially creating more meaningful and transformative learning experiences. Recognizing the evolving nature of charges also allows for reflection and adaptation of teaching practices even as, consistent with design thinking in education, it emphasizes doing and taking action.

Re-encountering

The concept of re-encounter, as contained in my thesis title, aligns with the idea of encountering and living the curriculum, as discussed by Grumet (1999). It involves consciously revisiting key moments of educational experiences and engaging with them through reflection. Drawing on the lenses of spaces, plurality, intensities, and charges, re-encounter becomes a dynamic process that deepens understanding and connection with the curriculum.

Through re-encounter, individuals actively re-engage with the physical, social, and cultural spaces that shape educational experiences, dialoguing with lived experience and recognizing the multiple possibilities they offer. Embracing plurality, individuals approach re-encounter with an open mindset, valuing diverse perspectives and experiences with the commitment to live with others in "ongoing, if complicated, conversation" (Pinar, 2012, p. 188) even as they are aware of their evolving subjectivity.

Sebald (2001) suggests that the process of returning should not be straightforward or predictable. Instead, it should be imbued with a sense of uncanniness and coincidence, taking unexpected and multidirectional paths. These paths may involve detours that allow individuals to encounter and engage with the stories of others in relation to their own, fostering a deeper understanding of their own narrative and creating meaningful connections (Strong-Wilson, 2021). In the intersecting fault-lines, a disorienting sensation challenges our perceptions, creating a space of "alterity" (Pinar, 2009, p. xii) where the human subject engages with the narratives of others.

This engagement can give rise to a concerned subject, marked by ethical responsibility and discomfort. Within this disquieting space, resolve emerges, balancing between hope and despair, as individuals confront the complexities of their own experiences in relation to others (Pinar, 2015).

The affective dimensions of re-encounter, explored through intensities, allow for a deeper understanding of oneself and the world as individuals navigate the emotional aspects of learning and curriculum. As Grumet (2015b) reminds us, "To live with children or with students … is to revisit the processes of one's own formation" (p. 223). The moments of living together with children in different places evoke nostalgia, reminding me of my own educational experiences. Introduced in *Teachers' ethical self-encounters with counter-stories in the classroom: From implicated to concerned subjects* (Strong-Wilson, 2021), critical nostalgia, as conceptualized by Svetlana Boym (2001), involves an ironic awareness of loss and a fragmented attachment to the past. It encourages a critical examination of past narratives and traditions, challenging their unquestioned perpetuation and potential injustices. Restorative nostalgia, on the other hand, seeks to reinvigorate a coherent national narrative that may dismiss or perpetuate past inequalities. When viewed through the lens of intensities, nostalgia becomes an emotional intensity that individuals may experience in educational contexts. Nostalgia can evoke a range of intense emotions, including longing, melancholy, and reflection, as learners engage with their personal and collective histories. It can shape their affective responses to curriculum content and influence their understanding of themselves and the world.

Last but not least, by engaging with charges, individuals uncover hidden influences and complexities, fostering reflection and adaptation in teaching practices. Encounters often commence with a sense of heightened interest, a perceived significance that Sebald likened to coincidences. When questioned about the occurrence of these coincidences in his writing, Sebald (2011) acknowledged that they carried a feeling of inherent meaning, despite our inclination to dismiss such sensations as irrelevant or peculiar. Re-encountering, therefore, is not simply a repetition of past encounters but rather a re-engagement with familiar or unfamiliar elements of life. By paying attention to the coincidences and following our instincts, one actively participates in the

process of re-encounter and open oneself to new possibilities for meaning-making and self-reflection (Strong-Wilson, as cited in Sebald, 2021). The meaning of a charge is brought to light through reverberations (Chang-Kredl & Lewkowich, 2019). A contradictory aspect is apparent, though. The fact that the charge is only briefly restrained and arrested suggests that its full potential might not be immediately or easily discernible (Chang-Kredl & Lewkowich, 2019). Charges do, however, have intangible effects that are uncontrollable. The effects of a charge endure and return even if one tries to deny or ignore them, demonstrating how charges continue to hold the possibility for novelty and difference to appear (Boldt & Leander, 2017).

Deep Learning

Deep learning encompasses the growth and development of six essential global competencies: character, citizenship, collaboration, communication, creativity, and critical thinking. While there is a growing consensus on the need for educational transformation, the real challenge lies in nurturing these competencies (Fullan et al., 2018). New Pedagogies for Deep Learning (NPDL) proposes four key elements in its learning design. These elements emphasize the generation and application of new knowledge in real-world contexts, moving beyond the mere transmission of existing knowledge. They intentionally foster collaborative learning partnerships between students and teachers, placing the learning process at the center of mutual exploration, creation, and utilization of knowledge. New pedagogies extend the boundaries of the learning environment by transcending traditional classroom settings. They harness the power of time, space, and diverse individuals both inside and outside the classroom, serving as catalysts for the construction of new knowledge and the cultivation of a vibrant learning culture. Embracing digital tools ubiquitously, these pedagogies aim to accelerate and deepen learning, considering technology not as a mere supplement or separate entity but as an integral part of the learning experience (See Figure 2.3).

Figure 2.3: Four Elements of Learning Design

Source: New Pedagogies for Deep Learning

The connection between deep learning and *currere* lies in their shared emphasis on the dynamic and experiential nature of education. While traditional curriculum models tend to focus on fixed plans and intended learning outcomes, *currere* recognizes the importance of ongoing lived experiences for both students and teachers. It views individuals as complex beings shaped by those who came before them, their present interactions, and the possibilities of the future. This aligns with deep learning's goal of fostering learners' global competencies by valuing their personal thoughts, feelings, desires, interests, and dreams. Both *currere* and deep learning acknowledge the interconnectedness of learning experiences and promote the idea that education should be a continuous process of communication, reflection, and personal growth.

Furthermore, *currere* offers a reconceptualization of curriculum design that resonates with the principles of deep learning. Instead of rigid objectives and standardized testing, *currere* encourages educators to create curricula that are responsive to the unique needs and interests of individual students. Similarly, deep learning emphasizes the importance of student-centered ap-

proaches and recognizes the value of personal meaning-making in the learning process. By incorporating students' diverse experiences, perspectives, and backgrounds, both *currere* and deep learning seek to create inclusive and culturally responsive curriculum. They recognize the power of students' voices and their agency in shaping their own educational experiences. Both approaches also emphasize the broader social and cultural contexts that influence learning, fostering a critical understanding of the world and promoting equity, justice, and social change.

Collaborative inquiry process and the facilitation of Design for Change

Collaborative inquiry is an essential part of the Deep Learning framework that enables educators to explore their professional inquiry and wonderings by analyzing their current practices and assumptions with their peers (Fullan et al., 2018). This process is divided into four phases, starting with the assessment of the strengths and needs of the educators (see Figure 2.3). Next, a strategy for change is designed to address the identified areas of improvement. During the implementation phase, formative assessment data is used to monitor and adjust the strategy. Finally, progress is measured, reflected upon, and changes are made using evidence to evaluate success and inform next steps.

Figure 2.4: Collaborative Inquiry Process

Source: New Pedagogies for Deep Learning

The collaborative inquiry process has become a popular strategy for promoting positive change in education due to its ability to enhance both professional learning and student learning outcomes. This approach has been recognized as effective by researchers and educators, such as Comber (2013), the Ontario Ministry of Education, and Timperley (2011). Through collaborative inquiry, educators can work together to develop their professional skills, exchange ideas and knowledge, and identify and implement effective teaching practices that ultimately lead to improved student learning outcomes.

More specifically, the step of "assess" starts with assessing where students are, their needs, strengths and interests, together with the curriculum expectation, which is followed by establishing the learning goals based on the assessment and six global competencies. It's also important to establish the success criteria with mixed method assessment including evidence that would document the achievement of the learning goals. When it comes to designing the learning experience to meet the goals and criteria collaboratively with other teachers and students, following elements are suggested to be taken into account: the effective practices, consideration of the partnerships, development of the environments that foster a culture of learning, and digital tools that leverage learning. Implement the designed learning experience with students, while scaffolding and guiding: How well are the students learning? What evidence do we have of the learning? What do students need next to deepen their learning? Meanwhile, students develop skills in both peer and self-assessment. Lastly, to ensure the effectiveness of a learning experience, it is important to measure, reflect, and change. This process involves evaluating the success of the learning experience in achieving the intended outcomes and collecting and analyzing data to determine its impact on student learning. The data collected from students feed into the next cycle of learning, allowing for a continuous improvement of the learning experience. Sharing the learning process with others can also serve as a catalyst for deeper learning. Collaboratively making changes to the learning experience based on reflections and data collected can better support deep learning and foster a more effective and transformative educational environment. By continuously improving and refining the learning experience, educators can better meet the needs of their students and ensure that they are providing the best possible education.

Design for Change (DFC) is a useful resource for teachers that provides them with relevant lesson plans and tools. However, in practice, it is often found that these resources may not always meet the specific needs of teachers in their local contexts. The pedagogical strategies and approaches recommended by DFC may not be enough to fully meet the diverse learning needs of students and to enable teachers to create truly transformative learning experiences. In such situations, teachers may feel that the depth of learning has not been reached, and they may become frustrated about how to improve their teaching practice. This is where the collaborative inquiry process of initiatives like New Pedagogies for Deep Learning (NPDL) can be particularly helpful. This process encourages educators to reflect on their existing practices and assumptions, and work together to make meaningful changes and get insights towards future facilitation. By engaging in this collaborative inquiry process, teachers can develop a deeper understanding of the diverse needs of their students, as well as gain insights into how to improve their teaching practices to better meet those needs. This process can also help to identify opportunities for innovation and collaboration, leading to the creation of more effective and transformative learning experiences.

My study explores re-encounters with Design Thinking in teaching through the lens of autobiographical inquiry, arts-informed and thematic analysis, in dialogue with the four aforementioned lenses. Moreover, the study also delves into how Design Thinking and DFC can be connected with other education initiatives, such as the collaborative inquiry process of New Pedagogies for Deep Learning (NPDL). (Re)encountering Design Thinking with Deep Learning - with their dynamic nature unfolded when linked to currere, running the course - highlights the significance of deep learning and design thinking as a process or movement: a journey undertaken by the self "over time" and "in the fullness of time, with many returns and re-encounters" (Yoder & Strong-Wilson, 2017, p. 92). By detouring into the lived experience related to DFC, woven in with NPDL, and by investigating the connections between these approaches, educators can acquire a more profound comprehension of how to combine different pedagogical strategies and approaches into their teaching practices, to better address the needs of diverse learners and encourage crit-

ical thinking and engagement. Furthermore, by examining these interconnections, educators can be helped to discover opportunities for collaboration and innovation, so as to design learning experiences that are more receptive to the complexities and challenges of our rapidly changing world.

Chapter Four: Methodology

In this study, I aimed to gain a comprehensive understanding of teachers' (re)encounters with Design Thinking in education. To achieve this, I conducted a qualitative research project with two parts. Firstly, I engaged in autobiographical inquiry, using the method of *currere* to critically reflect on my own journey as a student and teacher. Secondly, I conducted interviews with eight participants from China and Taiwan, using photo elicitation techniques to further explore their experiences. Thematic analysis was employed to analyze both sets of data, with the goal of uncovering the challenges and experiences encountered by teachers.

In employing autobiographical writing, I traced the experiences and events of my life that have spoken to my understanding of Design Thinking in education and DFC as a student and teacher. This process of reflection allowed me to gain insights into my past thoughts, feelings, and motivations. Arts-based research employs the principles and practices of the arts in order to foster new perspectives, raise pertinent questions, and highlight complex ambiguities. I chose to use poetry as my artistic medium of choice, as it is the form that I am most drawn to and most adept at in expressing my thoughts and feelings. Through the use of poetry, I am able to explore the multifaceted nature of Design Thinking in education and DFC and convey its nuanced complexities. For the participants of this study, I used interviews and photo elicitation. These complementary approaches have enabled me to develop a rich and nuanced understanding of Design Thinking in education, DFC and its implementation and facilitation in schools.

Autobiographical inquiry

Consciousness of self is the birthplace of truth.
(*George Wilhelm Friedrich Hegel, 1807*)

I write because I want to find something out. I write in order to learn

Autobiographical research in education is an approach that involves exploring personal experiences, memories, and reflections. This approach is commonly used to gain a better understanding of how both personal experiences and social contexts shape educational practices, policies, and beliefs. It can also be used to critically examine the researcher's role and the research process itself (Denzin, 1997). Autobiographical research can include a wide range of methods, such as personal narratives, autoethnography, life history interviews, and reflective journals (Adams & Jones, 2016). Autobiography is a way towards discovering sources of personal conflict and motivation (Graham, 1989).

As mentioned in *Towards a Poor Curriculum* (Pinar & Grumet, 2014), there are three aspects of the self that are important to study for educational experience: self-as-object, self-as-place, and self-as-agent. Autobiography is a process of reflection that reveals the self-as-object through reflective self-representations. This means that through writing about oneself, one can gain insights into who one is and how one perceives oneself. Writing reflectively about one's personal and educational experiences is encouraged in teacher preparation programs since it is thought that doing so facilitates developing a deeper understanding of the factors that are likely to affect their present and future teaching abilities (Chong et al., 2021). The self-as-place perspective acknowledges that individuals inhabit specific social, cultural, and historical contexts that shape their educational experiences. It emphasizes the significance of considering the broader influences that contribute to one's identity and perspectives. Lastly, the self-as-agent perspective highlights the active role individuals play in shaping their own educational journeys. It recognizes individuals as agents who actively participate in and contribute to their own learning processes. By studying these three aspects of the self, educators and researchers gain a deeper understanding of the complexities and nuances inherent in educational experiences, informing pedagogical practices and curriculum development.

Autobiography has long been a method of interest in understanding experiences or encounters. Gusdorf (1980) suggests that autobiography is believed to be truer than an initial reading of experience because it adds consciousness of itself to the raw contingencies of experience. Karl J. Weintraub (1975) has likewise emphasized self-awareness, contending that "real" autobiography is an interweaving of self-consciousness and experience, with a focus on an individual's self-awareness and its connection to their personal encounters. However, self-consciousness requires one to be true to one's own self, which can be adventurous and possibly painful (Sturrock, 1977). This is because a higher level of openness and honesty is attained when an autobiographer consciously delves into unexplored aspects of their past rather than focusing solely on familiar territory. It is important to note that in this context, distance does not imply detachment or disconnection; instead, it signifies the creation of a psychological space for reflection and examination. It involves temporarily stepping away from immediate emotions and attachments in order to gain a broader perspective. This distance enables the autobiographer to view their experiences from a more objective vantage point, uncovering previously unknown or overlooked insights and revelations.

Currere is a reflexive cycle in which thought bends back upon itself and thus recovers its volition.
(Madeleine R. Grumet, 1976)

The quote above suggests that one's thoughts and reflections continuously return to themselves, creating a self-referential loop. Within this cycle, thought gains a sense of agency or volition. In other words, the act of reflecting on past experiences and shaping future ones allows for a recovery or reclaiming of one's own intentionality and purpose in educational experiences. To provide a strategy to study the relations between academic knowledge and life history regarding self-understanding and social reconstruction, Pinar (1975) devised the method of *currere*. *Currere* is a theoretical approach to curriculum studies that emphasizes self-reflection and self-analysis as important parts of the curriculum design process. *Currere* involves exploring one's own educational experiences, beliefs, and assumptions as a way to inform and improve the development of curriculum for others.

There are four steps in the method of *currere* (Pinar, 1994, 2004): the regressive, the progressive, the analytical, and the synthetical.

Regressive. It is suggested that one return to past schooled years, to capture educational experience, such as one's prior life-in-schools, one's life-with-school teachers and one's life-with-books and other school-related artifacts. Observe and record, including present responses to what is observed.

Progressive. One thinks of the future, of tomorrow or the next few years, focusing on one's self-perception, teaching, and the goals one strives for in the educational setting.

Analytical. One describes and photographs the present like a camera, including one's response to this process, analyzing and exploring the connections between past, present, and future.

Synthetical. It involves redirecting attention to the present, gathering insights from past phases regarding what has been felt and noticed. Additionally, it entails examining the wider political and cultural context, as well as historical factors, to grasp the significance of educational experiences and one's unique perspective within them. Through this going back and re-read, individuals gain a heightened understanding of themselves and the current moment.

Carter (2014) argues that a fifth phase that she calls "Illumination" should be added to the *currere* process, in the belief that illumination leads to a more mindful understanding of experience, leading to personal transformation and a greater sense of purpose and direction in one's life.

Illumination. One moves beyond self-awareness to gain a more mindful understanding of educational experiences, which affects body, spirit, and emotions.

Through the process of autobiographical inquiry, I probe into my perception of education along the journey of becoming a teacher and verbalize the resonance that I sense with DFC's bringing of Design Thinking into education. I also use the *currere* process to re-imagine education based on reflection on my related experience as students and teachers in different contexts of Design Thinking, with the goal of arriving at my view of curricular integration and implementation of Design Thinking in Education. This autobiographical inquiry is supported by an arts-based research method of poetic inquiry.

Arts-based research

Arts-based research (ABR) is a unique research methodology that involves utilizing various artistic disciplines, including visual arts, performance, creative writing, and digital media to generate and present research findings (Leavy, 2015). ABR is an interdisciplinary approach that employs aesthetic judgment to create expressive forms that allow individuals to empathically participate in the lives of others and in the situations studied (Barone & Eisner, 2012). By using these techniques, researchers can access emotions, feelings, and experiences that are often difficult to express using traditional research methods such as interviews or surveys (Butler-Kisber, 2010). The ultimate aim of ABR is to enlarge human understanding; an "effort to extend beyond the limiting constraints of discursive communication in order to express meanings that otherwise would be ineffable" (Barone & Eisner, 2012). Eisner (1997) states that the validity of ABR is not measured by whether it accurately represents reality or meets certain standards, but rather by how well it communicates the artist's unique perspective and resonates with or illuminates the lived experiences of the viewer or audience. He contends that arts-based research should aim to reveal what has gone unnoticed, generate questions and new knowledge, and focus on educationally salient issues so as to make them visible to others. According to Eisner (2005), researchers who use arts-based methods should also engage in collaborative and iterative processes with participants and peers, which is what I did in this Masters research in combining autobiographical inquiry (with a focus on myself) with arts-based methods (with a focus on myself in relation to others).

Two arts-based research methods I applied in this study were photo elicitation and poetic inquiry, both of which incorporate artistic elements and creative processes. The former utilizes photographs as a means to prompt participants' discussions and reflections, while the latter involves transforming existing texts or data into poetic form and regards the creation and analysis of poetry as a way to understand research questions. Through such arts-based methodological approaches as photo elicitation and found poetic inquiry, emotions, experiences, and knowledge that may be challenging to express through traditional methods might become more accessible. By engaging in collaborative and iterative processes and being transparent about methods and interpretations, a study's rigor and reliability can be enhanced. I explain shortly how I used photo elicitation as part of my data collection and poetic inquiry within my data analysis.

Data collection

Autobiographical writing

The data I created for autobiographical inquiry encompassed various forms of written expression throughout this re-encountering journey, including the autobiographical writing I did in the graduate course Autobiographical Approaches in Education using *currere*, as well as personal working journals and reflective processes such as written reflection journals (a journal of journals) and poem-creation.

Autobiographical writing. I drew on writings created in the course of taking Autobiographical Approaches in Education with Dr. Teresa Strong-Wilson, which was informed by *currere*, and then by further following *currere*'s four phases. Inspired by the readings and discussion, and resonating with the prompts provided in the course, I wrote about my educational experiences across my own early years and in later working with children. As I embarked on this re-encountering journey, I retrieved memories of childhood and adolescence, together with my recollections of engaging with Design Thinking and DFC initiatives in India, Taiwan Peru, and China.

Personal archive: working journals. To explore my own (re)encounters with Design For Change (DFC), I dug into my personal archive; related memories and records were revisited: (1) My observation notes written and photos taken at Riverside School; (2) My posts on social media (Facebook, Instagram, WeChat) regarding DFC; (3) The translation work I did as a volunteer in DFC Taiwan (articles and videos); (4) Journals that I wrote as a volunteer in DFC Taiwan; and (5) My working journals written during my stay in mainland China. I used them as a source to help me write autobiographically, forming parts of my narratives.

Reflective processes. Reflection journals contain reflective memos, responding to the working journals listed above, "written regularly and reflectively about what is occurring, questioning understanding by attending to assumptions" (Butler-Kisber, 2018). I set them all down together in a notebook with the poems I created on re-encountering.

Recruiting participants

I also conducted qualitative research with others, drawing on photo elicitation inquiry and interviews. In selecting participants, I used a purposive sampling technique (Patton, 2007). Purposeful sampling chooses representative participants based on specific criteria identified by the researcher that aligns with the focus of the study. According to Polkinghorne (1989), researchers should conduct interviews with a limited number of individuals who possess extensive knowledge on the subject being studied and who can provide diverse viewpoints. I selected the following individuals as my interviewees, as some of them played a significant role in shaping my understanding and experience of Design Thinking and Design for Change challenges (being involved in these initiatives at the same time I was), while others had gained experience in implementing Design Thinking and Design For Change in schools so could offer new insights to my study.

I invited in Facebook conversation two fellow students/interns who had been visiting Riverside School during the journey in India with me. All of them have intimate knowledge of my personal

and academic lives during that period of time when I firstly encountered Design Thinking. I also contacted potential participants via the Wechat platform, sending invitations to five kindergarten teachers and one middle school teacher in China, each of whom had shown great interest in DFC, had experience in integrating Design Thinking into Education, and had carried out DFC challenges with students. All participants who agreed to participate in the study were given consent forms that detailed the project's purpose, which I also discussed with them to ensure they understood the nature of their participation, how I would protect their confidentiality, and their right to withdraw from the study at any time.

Interviews

According to Corbin and Morse (2003), interviews can be categorized into three types: structured, semi-structured, and unstructured. Structured interviews involve a predetermined set of questions and a controlled collection of information by the researcher. Semi-structured and unstructured interviews are less formal and allow for a more flexible, conversational approach between the researcher and participant. These types of interviews enable mutual dialogue and the exploration of topics beyond the predetermined questions. I opted for semi-structured interviews, this so as to have the flexibility to ask follow-up questions while still having a set of predetermined questions as a framework. Such an approach allowed me to collect and identify common themes for the implementation and facilitation of design thinking in education and DFC challenges, including the teachers' motivation for using DFC, the process, the student abilities or competencies they hoped to develop, the challenges they encountered and what they planned to do with DFC in the future.

The interviews with my fellow interns in Taiwan took place in February 2023 via Zoom, the video conferencing platform, at a time that worked for all of us; even though physically in China at the time, limitations on cross-border travel between China and Taiwan existed therefore Zoom was the preferred means for speaking together. The interviews with teachers in China were conducted in person at a mutually convenient time and in a quiet public location to help each of

them establish a level of comfort (Seidman, 2013). In order to gather detailed information from the eight participants (two from Taiwan, five from China), I audio-recorded the interviews, using open-ended questions to invite participants to tell the story of their encounters with Design Thinking in Education. During the interviews, I listened without interrupting and the participants shared information about our relationships, their professional development experience, teaching practice with Design Thinking and DFC, their interactions with students, their challenges and reflections on evolving selves. I incorporated photo elicitation with two fellow interns who were with me in India, while I just use interviews with the participants in China. The interviews lasted between 35 and 188 minutes.

Photo Elicitation

Photo elicitation is a research method used in a wide range of research disciplines, including education, psychology, sociology, and anthropology that relies on photographs to elicit discussion and reflection. Researchers show participants photographs and asking them to describe what they see, inviting them to articulate how they interpret the images and what emotions or memories the pictures evoke; alternatively participants can bring photographs of their own (Harper, 2002). One of the primary benefits of photo elicitation is that it can aid in the discovery of hidden or subconscious perspectives that participants may be unable to articulate verbally; the visual operates as a prompt for memory as well as for talking about memories. The photographic medium also allows for a more in-depth exploration of emotions and experiences that may be difficult to express in words alone (Rose, 2010). Furthermore, because participants can actively participate in the creation and interpretation of the images, photo elicitation can be a more engaging and interactive research method (Clark-Ibáñez, 2004). Another important aspect of photo elicitation is the role of the researcher as a facilitator of the discussion, by their asking of open-ended questions, actively listening to participants' responses, and also being aware of their own biases and assumptions that may influence the interpretation of the photographs. Overall, photo elicitation can be a valuable research method for exploring complex social and cultural phenomena, and for generating rich, nuanced data that can inform theory and practice (Prosser, 1998). There are several varia-

tions of photo elicitation, including group discussions, one-on-one interviews, and online forums. In my study, I combined photo elicitation with interviews.

Since the trip with fellow interns to India was already six years ago, photo elicitation proved particularly useful and appropriate. I invited participants to review the photos we took at the time to help us recall the situation and retrieve the memories, allowing us to visually represent our educational experiences and engage in a reflective and interactive process of dialogue and meaning-making.

Data Organization

I transcribed the audio-recordings of the participant interviews. Meanwhile, I also assigned pseudonyms to protect the privacy of my participants and any others mentioned in interviews. Then I reviewed the transcriptions to make sure they are accurate by listening again to the recordings and sharing the transcripts with the participants, asking them to check it for accuracy and completeness. All the field texts, signed consent forms, reflective journals and poems were stored in password-protected files on a password-protected computer in my residence.

Table 3 presents a graphical display of individuals' details such as their pseudonym, biography, and their association with Design Thinking and DFC. It also contains a column specifying the duration of the interviews, the number of interviews held, and the mode of the interviews.

Table 3: Participants and Data Collection

Pseu-donym	Biographical Facts	Connection to Design Thinking and DFC	Interview Format	Number of interviews	Total interview length (Minutes)

Lynn	Age: early 40s Sex: Female Location: Beijing	Teacher at a primary school, carried out DFC	On location in a coffee shop in Beijing	3	125
Gine	Age: early 30s Sex: Female Location: Beijing	Teacher at a kindergarten, carried out DFC	On location in a tea house in Beijing	2	80
Quinnie	Age: 27 Sex: Female Location: Beijing	Teacher at a kindergarten, carried out DFC	On location in a coffeeshop in Beijing	2	75
Aria	Age: early 30s Sex: Female Location: Beijing	Has been to Riverside School, Teacher at a kindergarten, carried out DFC	Audiocall from her home in Beijing	1	188
Juana	Age: late 20s Sex: Female Location: Zhejiang	Teacher at a kindergarten, carried out DFC	Audiocall from her home in Zhejiang	2	79
Tam	Age: late 20s Sex: Female Location: Zhejiang	Teacher at a middle school, carried out DFC	Audiocall from her home in Zhejiang	2	83
Ariel	Age: late 20s Sex: Female Location: Taiwan	Fellow intern in Riverside School	Zoom from her home in Taiwan	1	150
Elaine	Age: late 20s Sex: Female Location: Taiwan	Fellow intern in Riverside School	Zoom from her home in Taiwan	1	35

Rigor and Ethics in Qualitative Research

According to Lincoln and Guba (1986), qualitative research is assessed according to its trustworthiness and authenticity. To enhance trustworthiness and authenticity in research, several factors should be considered such as spending adequate time in the field, using multiple forms of field texts, ensuring convergence of analyses from various field texts, maintaining transparency in the research process, practicing reflexivity throughout the process, and basing conclusions on the field texts (Bourassa, 2020).

At first, I sought approval for the ethical acceptability of my study by submitting a request to the Research Ethics Board of McGill University, and subsequently received REB ethics approval from the university. In addition, the data collection of this study draws on multiple sources such as interviews, journals and observations, in order to provide a rich and nuanced understanding of the subject being studied. More specifically, I study my educational experiences throughout the years in various settings, re-encountering Design Thinking in education. I sought to relate, as transparently as possible, a detailed discussion of my inquiry process, taking into account biases and assumptions that may influence data interpretation. When it comes to interviews, to ensure the participants were fully informed about the study and their rights, I provided them with a consent form to sign, and retained the original signed copy while giving a copy to each participant. The participants were informed that their well-being and interests during the project were my primary consideration. It was entirely voluntary for them to participate. They have the right to withdraw from the project at any moment, and their confidentiality would be protected through the use of pseudonyms. If they decide to withdraw during or right after the study, all information obtained up until that point will be destroyed. Fortunately, no one withdrew from the study. I also sought to establish a comfortable and trusting rapport with the participants. Participants were informed that if they feel uncomfortable during the interview, they could refuse to answer any of my questions and suspend or stop the interview and recording. I indicated that after finishing the recording transcription and data analysis, I will send them a copy of my manuscript and their interview transcript, and they can check whether the transcription aligns with their feelings and experiences. They can delete or change what you say in these texts at that time. Finally, I strove

to establish the trustworthiness and authenticity of their findings by providing rich and detailed descriptions of my experiences and interpretations, as well as providing evidence to support my claims.

The methods used in the study demonstrate my continued commitment to ethical principles and contributed to upholding the rights of all participants and minimizing any potential harm to them.

Data analysis

Qualitative analysis is an iterative process but is presented here in a linear way in the interests of clarity. My focus for this part was on the creation of found poetry, which served as a powerful tool to evoke my emotions, interpretations, and discoveries. Simultaneously, I employed thematic analysis to extract key themes from autobiographical writing and the interviews conducted with participants. Throughout this process, I derived three themes from both my autobiographical inquiry and the participants' interviews, which unfolded in a parallel and interconnected manner. However, as I delved deeper, I recognized the inherent resonance and interdependence between these sets of themes. It became evident that the latter three themes were integral components of the initial three themes. Consequently, in Chapter 6, I presented the final convergence of these three themes as a cohesive representation of my research findings.

Poetic inquiry - Creating found poetry

Poetry is not a luxury, but a revelation or distillation of experience.
(Lorde, 1985)

How would the painter or poet express anything other than his encounter with the world?
(Maurice Merleau-Ponty)

Poetry inquiry is a common method used in arts-based research that involves the creation and analysis of poetry as a means of understanding research questions (Leggo, 2008). According to

Leggo (2008), by using poetic language, imagery, and metaphor, researchers can evoke sensory and emotional experiences that are often difficult to express in traditional forms of academic writing. This includes not only personal experiences and emotions, but also the larger cultural and social contexts in which these experiences take place. Flores (1982) also notes that poetic inquiry facilitates observation and reflexivity. While conducting anthropological research in another culture, Toni Flores recognized the transformative capacity of poems to shift the perspective from being the observer (subject) to becoming the observed (object). By utilizing poetry as a means of exploration, this study aims to uncover nuanced insights into my re-encounters with lived experiences, transforming my narratives into tangible objects of observation and self-reflection, thus deepening the understanding of the complexities of integrating Design Thinking in education.

One way of thinking about poetic inquiry is "found poetry", when words are extracted from transcripts and shaped into poetic form (Butler-Kisber, 2005). To write found poetry, there is no set format or method. Some researchers begin by reading over interview transcripts and thematically analyzing the material. They then set out to recreate the participant's speech patterns and rhythms by selecting those words that stand out the most to them (Butler-Kisber, 2010; Maykut & Morehouse, 1994). There are also researchers who have approached found poetry using existing texts, trying to highlight and represent salient ideas (Prendergast, 2006; Sulllivan, 2000).

Leggo (2008) discusses the challenges that may arise when using poetry as a research method, including subjectivity and interpretation. He offers several strategies to address these challenges, such as acknowledging the subjective nature of poetry and the role of the poet in shaping the poem, engaging in collaborative dialogue with others to explore the poem's meaning and significance, using multiple poetic forms and techniques to capture diverse perspectives, and being open to multiple interpretations and the ambiguity that arises from using poetry as a research method. By employing these strategies, researchers can overcome the potential difficulties of using poetry and reap the benefits of its unique capacity to represent complex and nuanced experiences.

In this study, I engaged in reflection along with autobiographical inquiry by creating found poems. According to Butler-Kisber (2010) and Yagelski (2011), found poetry can help teachers to gain a deeper and more nuanced understanding of their teaching practices and the contexts in which they operate, as well as to explore and challenge their assumptions and beliefs about teaching and learning. This approach helps me to reflect on my teaching practices and experiences in a creative and non-threatening way (Schwindt & McMaken, 2010), and facilitated me in articulating and expressing emotions, feelings, and experiences related to teaching in a more vivid and powerful way than traditional methods such as journal writing (Lai, 2011; Owens, 2007).

Apart from facilitating my reflection process together with autobiographical inquiry, found poetry was employed to inform the lessons learned while doing DFC. After conducting the interviews, I recognized the need to go beyond just transcribing and thematically analyzing the data. I wanted to create a more immersive experience for myself in order to fully capture and engage with the essence of the participants' stories. That's why I turned to found poetry as a way of deepening my, and our, engagement with our Design Thinking journeys. By carefully selecting and weaving together key words and phrases from the interviews, I was able to capture the participant's speech patterns and rhythms, thus creating a more emotional and visceral representation of their encounters with Design Thinking initiatives. Through this process, while gaining a deeper understanding of their stories and experiences, I was also able to create a more meaningful connection with the participants.

Thematic analysis

Thematic analysis is a qualitative research method that involves identifying, analyzing, and reporting patterns, or themes, within the data (Braun & Clarke, 2006). As described by Boyatzis (1998), the analysis strives to go beyond a simple description and aims to interpret the data in a meaningful way. Braun and Clarke (2006) outlines the steps involved in conducting thematic analysis, including data preparation, familiarization with the data, generating initial codes,

searching for themes, reviewing themes, defining and naming themes, and producing the report. When conducting thematic analysis, it is crucial to consider what counts as a theme from different perspectives. One key aspect to consider is the approach used, whether it is inductive or theoretical. Inductive approaches are data-driven and involve identifying themes directly from the data. In contrast, theoretical approaches are driven by pre-existing theories or concepts and involve using the data to support or refute those theories. Another aspect to consider is whether the themes are semantic or latent. Semantic themes are based on explicit meanings and ideas that are easily identifiable in the data, while latent themes are underlying and implicit meanings that require more interpretation and analysis to uncover.

In this study, I was firstly engaged in close reading of the interview transcripts in order to become familiar with the data. Next, I utilized the constant comparison approach, which involves comparing and contrasting data to identify emergent themes (Maykut & Morehouse, 1994). Although this approach can be time-consuming and challenging, as it requires the researcher to continually revisit and refine the themes, it offers the advantage of producing rich, detailed analyses that capture the complexity of the data. Thematic analysis has a limitation in that it disregards contextual details by focusing on the content of participants' stories and experiences, as opposed to how stories were told, as pointed out by Riessman (2008). Nevertheless, this method allows researchers to identify common themes across participant responses (Butler-Kisber, 2018). Using this approach, I also turned to the field texts, sorting them into categories based on their expressed meaning and applying rules of inclusion to ensure clarity and consistency. These rules of inclusion helped to define each category and ultimately led to the emergence of conceptual themes. Through a rigorous inductive process, characterized by the continuous expansion and subsequent consolidation of categories, I reached a state of saturation where no new insights or perspectives emerged. This methodological approach allowed me to distill a final set of conceptual themes that encapsulated the pivotal findings of the study.

The first theme, "Creating pauses and becoming aware," underscored the significance of intentional moments of reflection and mindfulness in fostering personal growth and self-awareness.

The second theme, "Respecting individual differences and autonomy," emphasized the importance of acknowledging and honoring the unique perspectives and autonomy of individuals within the research context. Lastly, the third theme, "Empowering the silenced self," shed light on the transformative potential of empowering marginalized voices and creating spaces for their narratives to be heard and validated. Collectively, these themes provided a comprehensive framework for understanding the rich complexities and transformative possibilities inherent in the research findings.

To achieve theoretical saturation in qualitative research, I aimed to reach a stage where newly collected data no longer provides additional insights, and the emerging themes and categories are well-established and clearly defined. This stage ensures that researchers have thoroughly explored and accounted for all the relevant themes and categories within their data set (Strauss & Corbin, 1990). The concept of theoretical saturation is a fundamental principle of rigor in qualitative research, which helps to ensure that the range of experiences and perspectives within the data are fully explored and represented.

In summary, this chapter presents a thorough exploration of the methodological theories and strategies employed in the study. It offers a meticulous account of diverse qualitative field texts and data sources generated through the utilization of autobiographical inquiry and arts-based research methods. The data collection process encompassed several phases, including engaging in autobiographical writing, recruiting participants, conducting interviews utilizing photo elicitation techniques, transcribing the conversations, addressing ethical considerations pertinent to the research, and employing both poetic inquiry and thematic analysis to analyze the data.

Chapter Five: Autobiographical Inquiry

This chapter is dedicated to the autobiographical inquiry component of the research. Along with the phases of *currere*, while referring to my personal working journal and reflecting using research memos and poetry creation, I recount educational experience from childhood, to school life, all the way to when I encountered Design Thinking in India and when I started working with children in Peru and China. By sharing my stories and these key encounters, and re-encounters, in my life, I have sought to document and reflect on my experiences, thereby deepening my understanding of what I conceptualize as (re)encounters with Design Thinking in teaching and enhancing the development of my teacher identity. My memories are arranged chronologically and then transformed into poems to distill the emotional aspects of each experience. Each section is given a name inspired by the poems.

Entrance: Where the adventure begins

Memory drops on her,

So does the adventure.

Where does she come from?

She's from home,

A place where she doesn't have the fear to show who she is.

As I journey in life, I increasingly realize how my childhood experiences have nurtured my soul and nourished my spirit with the values of courage, gratitude, interconnectedness with others, and generosity. These form the foundation of my life and remind me of hope and anticipation for the adventures that lie ahead.

A particular scene lingers in my memory. I, a small child, holding a safety helmet, followed the teacher through the classroom to the inner room, with my father walking behind us. Inside the small room, there was a row of storage cabinets taller than me. I held the safety helmet with both hands and put it on top of the cabinet leaning against the wall. As I grew taller, I could see the

surface of the cabinet and could put the helmet away without lifting it over my head. I turned around and waved goodbye to my father, starting a new week there. It was a boarding kindergarten and children normally arrived on Mondays and left on Fridays. I was one of the earliest children to arrive, even though my home was further away. When I was young, I always felt that the distance from home to school was very long, and mornings the longest time of the day.

On Monday mornings, my mother always came to wake me up. The winter in my hometown was very damp, and there was no heating indoors. It took a lot of courage to get out of bed. Sometimes my mother would put my cold cotton pants into the bed to let me adapt to the temperature in advance. After warming the pants under the covers, I would put them on sleepily, my eyes closed, and then get up reluctantly. Sometimes I found that I had put them on backwards, which was a disaster. It meant I had to go through the agony of returning to the bed's warm embrace then leaving it again.

Memories of washing up and having breakfast are blurry and fleeting. The scene fast forwards to me sitting on the back seat of my father's bike, saying goodbye to the people working at the reception office, and they would wave back, smiling. They were a couple who lived in a small house at the entrance of our residence building. They collected our mail and guarded the gate. They also had a daughter who was about the same age as me, but we didn't talk much except for a few words when we both went to help our parents collect the mail.

Figure 3.1: On my way to school

During our journey from home to school (see Figure 3.1), we traversed two bridges, passed beneath an elevated overpass, and crossed a lengthy, bustling thoroughfare. My dad rode fast and had good skills, shuttling through the crowd. Sometimes there were collisions, and I didn't know how I ended up on the ground. People passing by would say, "Hey, why is there a child sitting in the middle of the road?" Through the windshield of my helmet, I saw that my dad hadn't ridden too far ahead. He rode back against the flow of traffic to find me. "Haha, how come you ended up on the ground? If you fall down again next time, remember to stand up and go to the side of the road immediately, for the sake of your security." I laughed while nodding and sat back again on the scooter.

This is my earliest memory of going to school. From the earliest part of my life, I appreciated the care, support, and respect my parents gave me as an independent individual. My father grew up in the countryside and had to walk for several hours to get to school when he was little. He had succeeded in exams and then went to the city for further education, eventually finding a stable job and settling down there. My mother lived in the city and served in the navy as a nurse before retiring and working in a hospital. My childhood was spent in two different environments: the

rapidly changing, materially abundant city, and the tranquil, traditional countryside of farming, with a one-hour drive between. We lived in the city and visited the countryside on weekends.

Where am I from?

I'm from home, I'm from you, where the adventure begins.

I'm from dancing on his feet and feeling the wave,

I'm from the weekends helping her bring clothes to the village.

I'm from driving (partly) at the age of 8,

I'm from the cigarettes we shared (but failed to enjoy).

I'm from the stories unfolded and the decisions supported,

I'm from "believe in yourself" and "relax your shoulders."

I'm from your eyes and arms, seeing me off and welcoming me back.

I am from the city, I am from the countryside.

Deviation: D0uble coercion

She's not unfamiliar with coercion,

On the playground, behind the test scores,

Having a lot to say,

Or rather, to ask,

Ending up swallowing them all.

My memories of schooling are marked by standardized answers and single values. Education in China is exam-oriented education. Early on, I became aware of an authority dynamic. Under a restrictive framework, which discouraged or even prohibited independent thinking, I found my-self afraid to speak up, fearing that my thoughts and opinions might deviate from the expected answer. I didn't enjoy that feeling of being unsafe and unsupported during the learning process. I came to realize that adhering to the standards of being a good student or obedient child caused

me to struggle. While following societal expectations and seeking external validation, I became disconnected from my true self, drifting from my inner voice.

I really became familiar with coercion when I started working as a teacher. One memory especially haunts me. I had started to work with 3-year-old children in the pre-school. I saw my co-teacher shouting angrily in order to intimidate the kids into being quiet. I also saw her shouting when she was forcing a kid to bed while the kid was screaming out loud, saying 'I don't want it.' Children are not the copy-paste products of their parents, and are not destined to follow in the footsteps of others. Coercion, I find, is double-edged: punishment, on the one hand, and educating for one's own good, on the other. It can be hard to tell if and when they are different from one another.

I still remember the big deep red "0" on my Chinese exam paper in the final exam of second grade of elementary school (see Figure 3.2). My Chinese teacher, Ms. Huang, traced it repeatedly with her pen, letting the lines intersect with each other heavily, as if expressing her strong emotion.

Figure 3.2: "0"

"Hey, Ms. Huang would like to talk to you in her office!"

It was a large office shared by eight teachers. When I entered, only Ms. Huang was there. Her desk was in the innermost part of the room, facing the door. "Do you know why I called you to my office?" Her tone was serious as she pushed my exam paper in front of me, and the red "0" caught my eye. "The topic was to write a letter to the principal, but you wrote a 'complaint' letter to the principal, didn't you?" Her tone was forceful, and she seemed not to expect any answer. I didn't speak.

The day before the exam, something happened that I felt was unfair. There was an art class on the playground, and our art teacher invited a TV reporter to report on the giant paper spacecraft model he had created. He arranged for six classmates to enter the spacecraft and stand at its head to wait for filming. However, the reporter took longer than expected to arrive, even past lunch time. While other classmates returned to their classrooms to have lunch, the six classmates were not allowed to leave the spacecraft. "You are not allowed to go anywhere! Just stay inside! The reporter will be here soon," the Art teacher shouted impatiently and furiously. The students in the spacecraft stopped talking, some murmured softly. We were very hungry. One student suggested, "Let's bring your lunch boxes here!" So several classmates and I went upstairs and brought down our lunches. "Are you all so hungry? Eat quickly and hurry up to get back inside the spacecraft." Our Art teacher only seemed to care about whether those students would appear on the spacecraft when the reporter arrived.

"We have a hidden requirement for writing essays in the Chinese exam, which is not to write negative things. Are we clear now?"
"Did the principal see my essay?"
"It doesn't matter whether the principal saw it or not."
But, but…
But I didn't say anything else.

I chose to remain silent after asking that one question. It might have been the invisible power dynamic between teacher and student that made me believe that my attempts would ultimately be fruitless. Ms. Huang used the tactic of giving me zero points to teach me the skill of striving to achieve high scores but really in order to make me more careful in selecting writing content. What my peers were experiencing and the need for a dialogue about the injustice of the incident mattered more to me. I was afraid of the Art teacher's scolding, so I decided to voice out my opinion in the Chinese exam. The idea of empathizing with users' motivations lies at the core of Design Thinking, which places a strong emphasis on human-centeredness. The users are the individuals that educators encounter in their work, such as students, teachers, parents, administrators, and other staff members. In this case, the user, I, as a student who longed for dialogue and justice, was not seen or taken care of.

Temporarily closed: The neglected self

Many precious moments arrive (un)expectedly,
When I tried to stand up for the school janitor,
Or George decided to try the magical broccoli.
Some souls go unnoticed,
While others start to shine.

In the context of a test-oriented education system and the expectations of authoritative teachers, students become immersed in the system without having the opportunity to explore their true selves and develop a sense of self-assurance. Our daily schedule looked like this in high school. The wake-up bell rang at 6:30 am. At 7:15 am, students entered the classroom to start morning self-study (usually English and Chinese reading time). We studied different subjects throughout the day until 4 pm. Before 5:30 pm, we had time for sports activities, showering, and dinner. Then we had evening self-study until 9:40 pm, during which teachers would patrol the class-

rooms, and we were not allowed to do anything other than academic study. An unsettled feeling may have come from awareness of my interests and curiosity, which were being diluted by a highly compact schedule. When I first heard about Design Thinking in Education and Design for Change, I came to realize where the excitement came from. It was from my neglected self, which had been longing and longing for a more equitable life: not just for me, but for all of us.

Figure 3.3: Illustration of a winter in December 2013, Hangzhou China

It was a severely-polluted winter ten years ago. I was studying in a boarding high school in eastern China. That year, there were many hazy days with poor visibility and an abundance of PM2.5 particles in the air. Everyone wanted to stay inside due to the negative effects of the suspended particles. It was at that moment that I became aware of the existence of N95 masks. The time set aside for outside activities was likewise modified because of the air quality. Due to persistent haze, there followed days when the air quality was "hazardous," necessitating not only the cancellation of outdoor exercise time but the wearing of masks by pupils as they left the classroom.

Seated near the window in a third-floor classroom, I felt as though I was in a sea of clouds. The sea of clouds was aesthetically rather romantic, yet very few people felt inclined to approach in such conditions. Sitting in the classroom, and tired of reciting the events of the year from my history book, I looked out the window to give my eyes and brain a break. A black shadow appeared in the white, moving slowly and holding something in their hands (see Figure 3.3). As the dark shadow approached, I realized it was one of the support staff who did cleaning in the school, but why wasn't he wearing a mask? Working outdoors for long hours every day, breathing in suspended particles, they more than most needed to wear masks. At recess, I went to the teacher's office and shared my thoughts with the homeroom teacher and received the following response: "There's nothing I can do about it. Don't obsess over it. Instead, focus on your studies and getting ready for your tests." I returned to the classroom, feeling unsettled, overwhelmingly confused and even helpless.

That night after class, on the way back to the dorm, I met the same cleaning staff member and gave him half of the N95 masks in my bag. He said "thank you" several times and I got to know that he didn't even know where to buy one. He could finally wear a mask to protect herself, but what I did was too limited, I thought. What about next winter? And the one after that? Many years later, I recalled this experience and wondered if only I had held out a little longer, been braver, and despite the teacher's discouragement, had written a letter to the office in charge or tried to ask for advice and support from peers and trusted adults, would the impact of my action have been more sustainable? What if it had become the subject of my own DFC challenge back then? I would have really had to understand the user first, the school janitors; in reality, my knowledge of them was very limited. I would have wanted to know many things, such as what their daily work schedule was like, how long they spent outdoors, and how the school labor union approached the matter.

From the girl who chose to remain silent after telling a "negative" story in the final exam in primary school, to the decision I made to talk to the homeroom teacher about my concerns for the janitor, I had nevertheless experienced change and growth within myself. While I understood the

Art teacher's persistence on the importance of being featured on TV and the Chinese teacher's adherence to grading standards, back then I felt that there was no room for dialogue; that nothing could not be changed. I simply accepted it. However, in my high school years, I felt more empowered to voice out. Realizing the importance of "myself" is the starting point for everything. It might be the very reason that sometimes prevents me from taking further action: so much depends on moving the self. Design thinking instills students with the idea that they can make a difference, which is followed by applying a process of planning to seek new approaches that meet needs and generate positive effects (IDEO, 2018). At that time, my sense of helplessness stemmed from the idea that though this was something that I would like to dig deeper into and perhaps do my part to change, I did not yet have the confidence or determination to take a step in that direction.

Roundabout: At Incredible Riverside

This doesn't happen by Chance, it happens by Design.
(Kiran Bir Sethi)

Pause before we are about to define,
Connection leads to inspiration,
Not by chance, but by design
Where each of us blooms,
Ongoing, creating.

The cattle are domesticated. They come back home when dusk approaches. Cattle, elephants, camels, monkeys, chipmunks, living harmoniously on streets which I would not consider tidy and clean, but absolutely vivid. Walking on the sides of streets or crossing the roundabouts, I tried not to block their way, sensing inner peace.
(Excerpt from my internship journal at Riverside School and photos taken in India in 2017)

Figure 3.4: Photos of my journey in India in 2017

The ivory-white tree-shaped columns in the Mumbai airport, the colorful shawls draped on local women, the "Ladies Only" signs on segregated pathways, and the winding conversations at immigration while struggling with English all confirmed to me that I had completed the furthest displacement from my hometown of Hangzhou in this lifetime. The torrential rain that inundated the city during the first week also challenged my preconceived notions of India. Despite the flooding that reached calf-deep levels, few people bothered to carry umbrellas or wear raincoats. It seemed as though the rain was a blessing from the heavens. The school bus driver rinsed his feet by the door, while a group of youngsters swam and played in the pooling waters. Everyone moved at a leisurely pace, in stark contrast to our hurried rush through the rain with our umbrellas. The encounter with different cultures not only brought novelty but prompted deep reflection and self-awareness.

At Riverside School, I saw teaching practices which were very different from the ones I had grown up with. I saw an iterating of the curriculum through each teaching and learning process

to make the content more relevant and more appropriate for students' learning. Asking questions, sharing ideas and perspectives, communicating and coordinating, reaching consensus, working together to apply what they've learned.

Teachers in Riverside School demonstrated, too, how all of this did not happen naturally, but required the teacher to design the learning experience; to select topics relevant to the children or drawn from their life experiences. Teachers helped students to realize the close connection between knowledge and life.

The main activity of my trip to India was an internship: a three-week immersion program at Riverside School, which involved observing classes, attending workshops, interviewing teachers, designing and creating learning experiences both inside and outside of school. For me, the beauty of the journey also lay in the company of fellow interns. We interns and the professor gathered together, shared our observations and thoughts, and saw each other in a non-judgemental ambience.

"Not by chance, but by design" (Sethi, personal communication, 2016) was pervasive at Riverside School. Initially, what impressed me the most was the confidence and ease of the students in the classroom, their willingness to express doubts, raise questions, and present their own opinions. Even more interesting were scenes of co-constructing knowledge and nurturing beautiful characters, with the support and guidance of the teacher. Every semester, through the Design For Change vision that informed the curriculum, students worked together to try to solve a certain problem bothering them, reflect on what they have learned, and share their learning with others. Riverside School was also trying to develop a teacher-driven observation protocol to help teachers identify areas where they wanted to improve and invite others to observe and record their progress in the classroom. Thus, our importance as interns.

The three-week immersion program at Riverside School was like the realization of my educational ideals. I witnessed how incredible educators and leaders incorporated design thinking into

creating school culture, teachers' professional development and student learning. During my first week, I had the opportunity to observe classes across all grade levels. I met two teachers, Rhanjani ma'am from sixth grade and Mira ma'am from seventh grade, who truly impressed me with their teaching methods and personal character. They creatively connected classroom content with real-life experiences, making their lessons engaging and reflective. I was fortunate enough to be invited by Mira to share some Chinese characters and culture during a language class of Japanese culture, as some students showed interest at the beginning of the semester.

I especially remember one sixth-grade English class with Rhanjani ma'am. The topic was poetry. The teacher took out a bottle of perfume and sprayed some on a tester strip, passing it around for everyone to smell and asking what they could detect. She recorded their answers on the whiteboard. She repeated this process, and some students detected different scents than before, which she also recorded. The teacher then asked, "What is the connection between smelling perfume and reading poetry?" One student replied, "We all smell different things," to which the teacher responded, "Everyone's analysis is different," and wrote it on the board. Next, the teacher opened the perfume's webpage and showed the elements it contained. She found that some students smelled scents that were not listed, while most smelled the most obvious ones. She then had them smell it again, and most said they smelled the scent listed on the webpage. Finally, the teacher said, "Most people smell the top notes of the perfume, but few people smell the middle and base notes. Not everyone gets every scent, but everyone gets a part of it. What do you think we need to do when we read poetry?" The students believed they needed to be open-minded. The teacher explained that in the perfume world, there are perfume connoisseurs who can accurately sense and interpret each perfume. She then asked, "How does this apply to poetry? Who would be the connoisseur of poetry?" The students responded: poets, critics, and "everyone." Finally, the teacher said they all shared in the ability to "get much out of a simple poem" and introduced two words: denotative and connotative. She explained that when reading poetry, they needed to understand the context. After asking the students to recall what they learned, Rhanjani ma'am ended the session by reading aloud a poem. Rhanjani ma'an later shared with me that this lesson was the result of collaborative planning with a science teacher at the school. Based on their un-

derstanding of the students in the class, they refined the learning objectives of each subject through discussion and broke down disciplinary barriers, establishing pertinence.

During the second week, the interns participated in a variety of workshops led by the teaching staff, covering topics such as curriculum planning and citizenship education - both key aspects of Riverside's educational approach. However, during this same week, I had to spend time preparing and practicing my two sessions on Chinese culture, which required discussions with two of the school's Grade 6 and 7 teachers. Unfortunately, one of the workshops I was scheduled to attend coincided with our discussion time. The responsible teacher urged me to stay, saying that the students would understand. Although I was initially reluctant to do so, I soon realized that this experience taught me a valuable lesson - that flexibility can be an essential part of living life to the fullest, particularly given the many variables we encounter. Rather than focusing solely on questioning how and why things happen, it may be helpful to consider what we can do in the present moment. During a subsequent conversation with the responsible teacher, she shared a quote from Kiran Sethi, the school's founder and director, who often said: "Don't talk about people, talk to people" - a sentiment that resonated with my own newfound appreciation for flexibility and adaptability.

During the final week at Riverside School, apart from leading the sixth-grade origami class, Neena ma'am also helped me schedule interviews with other teachers to address my queries. I was deeply moved by the effort each teacher put into sharing their knowledge with me, highlighting the value of "being better together." During a meeting with Nandini ma'am in the school garden, it was revealed that the Reading class was introduced at Riverside only a few months ago. With the support of school leader Kiran, a room on the third floor was transformed into a comfortable reading space for students, with books categorized and different areas to choose from. To promote reading, Nandini emphasized the importance of understanding each student's upbringing and environment. The school also provided tailored English courses for parents who do not speak English. Finally, teachers encouraged students to share in English in front of the whole class. Teachers at Riverside gradually introduced English vocabulary starting from Pre-K.

The adults' behavior influenced a child's enthusiasm. If adults were eager to explore and felt passionate, children would empathize and be inspired (Nandini, personal communication, 12th July, 2017).

A precious feeling of mutual growth that arose from seeing, understanding, supporting and being inspired by each other has flowed continuously from five years ago to today, becoming even more abundant rather than depleted (C. Sun, personal communication, April 18, 2023). I can't help but feel that it may be difficult to encounter such a profound connection and inspiration in the future. On second thought, this may be the very image of the education that I identify with and I would like to create. Teachers are granted priceless opportunities to support students to grow and thrive. If I compare my journey at Riverside School to walking along the riverbank, observing and immersing myself in the teaching scene while occasionally dipping my feet into the river to interact with the students, then my journey is like swimming in the rivers of Peru. There, I was designing the learning experience by integrating resources and preparing teaching plans, all while keeping a close eye on delivering an enriching educational experience.

Winding road: Helping Overcome Obstacles together

from… to…
What if?
Aha!
Out of the mess,
Grow the insights.

Inspired by Riverside School, I kept thinking about what children need in schools and whether these skills would continue to benefit children in the future when I was doing my internship in HOOP - Helping Overcome Obstacles Peru, as an academic assistant, English teacher and art teacher. I wished to create a curriculum relevant to students' lives and that could deepen their

learning experiences. After talking to several teachers, students, and based on my own observations, for a series of art sessions while teaching in the community center of Helping Overcome Obstacles Peru, I set the goal of having students explore the design of objects in our daily life while being exposed to various accessible materials. From hunting for plants outside the school, to creating tree shapes using cotton swabs; from making paper airplanes and trying them out on the playground to optimizing and decorating paper airplanes in the classroom; from reading picture books to understanding book-making and writing and drawing their own stories in books that they made, from using one rope to lift a cup to building a space using only paper…I never thought I could design art classes so enjoyed by students of different ages; that would provide me with significant personal growth during the process.

When Mother's Day came, the children wanted to make a bracelet for their mothers. However, when I broke down the steps, I realized that the children aging from 5 to 12 years old might need some time to try out their preferred designs before stringing them together. The bracelet components were small, and some were round and could roll around. How could we solve this problem? Each child needed a space to freely design and temporarily fix each small part. My colleagues and I took an inventory of the resources in the classroom and found that we could use play-dough to make a design table with 'borders.' That was a brilliant idea. It not only provided support for children's exploration of materials and space in which to try out their design, but also made full use of the resources we had at hand. Each child designed their one and only bracelet for their mom.

Figure 3.5: An art class in Arequipa Peru in March 2019

Artworks tell stories of children, and so do the processes of their creation. At the beginning, I used to wonder whether I was patient enough, in terms of giving adequate time and respect for children to explore as they wish, at their own pace. This enchanted space of life and of teaching, where our shared energy could come together to produce the unexpected, to work within the "messy" in order to create something new: this was my hope, and challenge. I took this photo during the second art workshop I facilitated when I was in Peru (See Figure 1). I planned to explore leaf rubbing with the children, applying paints to the leaves and creating patterns based on them, whereas Mareory, one of the students, was obsessed with mixing colors until the whole sheet of paper was covered with dark colors (See Figure 3.5).

"Should I interfere? It doesn't seem to be aligned with the learning goal of this workshop." "But where does the learning goal come from?," I asked myself. "It was set by me before the workshop and all these organic interactions took place." "Children have the right to explore their tools and materials, especially the world of colors when it comes to art." These were the thoughts ricocheting back and forth in my mind as I watched Mareory. Gazing at the layers of dark colors, I then wondered how she felt about her creation—and what she would do next. Mareory paused for a while, then took up a fine twig and began to outline shapes with white lines and curves. How brilliant, I thought.

"Teacher, I don't know how to draw," said a seven-year-old girl with two braids staring at her blank paper, expressing her concern in a soft voice. "What about we playing with it? Shall we start from looking at it, smelling it, touching it, and let's see what we can do with it?" I replied. "Ok, teacher," she responded. About six weeks later, we explored spin art together in art class. Spin art is a form of artistic creation that involves using centrifugal force to create unique and colorful patterns. It typically involves placing a sheet of paper or canvas on a spinning platform or turntable and applying drops or splatters of paint onto the surface. The children brought their selected color pens to interact with a small electric fan and create patterned artworks. It was a novel experience for the children and even a bit scary, as the fan was spinning at a considerable speed. "Teacher, I want to have a try!" It was that girl again, her clear voice breaking the silence. "Go ahead then, have fun!" I said. The girl carefully approached the fan with different color pens, creating colorful concentric circles. Behind her, a queue began to form (see Figure 3.7).

Figure 3.6: Exploring spin art

From the first class when she said, "Teacher, I don't know," to gradually feeling at ease and actively seeking help from others, saying "Teacher, I want to have a try!", I deeply sensed the impact of what had happened in that small classroom. I saw her hesitate but still make attempts, slowly feeling at ease to seek help and even express her wishes. At the time, she didn't yet realize the impact our interaction left. For me, as a recent graduate entering the education field, it was a precious affirmation and recognition: even, the initial source of strength that led me to continue exploring this career path. However, regarding this photograph, there is another story about the small fan. Due to the lack of budget for art class, I had to prepare teaching materials on my own. Most of the staff thought that I was too optimistic and that this was an impossible task, which made me feel sad for a while. However, I was able to borrow a small fan from a fan store and gradually transform it into a teaching aid that could support spin art after consulting with two engineering friends. Design Thinking can help us to believe in our creativity and have confidence in the process of turning crises into opportunities (IDEO, 2018).

Detour: Finding my way back into kindergarten

An adventure out of the planned way,
A chance to explore, to stop, to stay.
A twist and turn, a shift in view,
Self-discovery, growth and change,
From being home to "creating home"(Wang, 2004).

At Riverside School, I witnessed a supportive school culture, engaging classes, unique and collaborative teachers, and most importantly, a spirit of taking initiative not by chance, but by design . In Peru, I had the opportunity to explore "making connections and building relevance" through art classes. However, it wasn't until I returned to China to teach in a kindergarten that I truly began to see each child and build up beautiful relationships while witnessing their growth. When I found myself having a clear intention to pay attention to each child as an individual, it

invariably helped me to focus. It was like sailing towards a lighthouse. Even though the route may not be straight, the direction is clear. Children need to be respected. When I learn to observe them with appreciative eyes and listen to them with a patient attitude, the flow of lively thoughts from these young lives moved and surprised me. This was not only a privilege for me as a teacher, but also, I felt, my responsibility. Far from a standardized answer, a multiple-choice or true-false question, I found myself more willing to embrace ambiguity. Only by attempting to confront challenges can we get a deeper understanding of the problem and test out possible solutions.

Figure 3.7: The sandstorms in Beijing China in March, 2021

(from left to right, from up to down)

Marching Dinosaur, Misty Forest, Fading Red, "It's a sandstorm!"

"Wow, I see you put a LOT of orange color on the paper."

"Haha, it's a Sha chen bao (sandstorm)."

Upon receiving the paper, Kenny quickly grabbed an orange crayon and finished his masterpiece in a few minutes, while others were still meticulously selecting the colors for daddy bear's backpack, brother bear's cap or baby cat's dress.

Looking at a cluster of photos, it's often easy to make a quick judgement based on the first thing that comes to mind. In this particular group of photos, it might be easy to assume that the orange color represents a sandstorm, but I wondered if Kenny was bored with drawing and just wanted to finish as quickly as possible. Upon closer inspection, it was clear that there was more to the image than appeared. It became apparent that Kenny was actually trying to cover up as much of the blank space as possible with his colored blocks. It was only when I heard about the sandstorm that I understood the true significance of Kenny's drawing. This natural phenomenon had overshadowed all other stories, connections, and possibilities on the paper, yet it was expressed explicitly, through the use of color. The sandstorm had left a significant impact on Kenny, and this was his way of expressing that impact, that encounter, visually.

It was during the spring semester when the sandstorm struck our city, enveloping it in a thick haze that lingered for days. The air quality deteriorated to dangerous levels, prompting authorities to issue warnings and advise residents, especially young children, to stay indoors. The news of this restriction saddened the children, as outdoor play had always been a highlight of their day. They longed to feel the warmth of the sun on their faces, the joy of running freely in the open spaces, and the excitement of exploring nature. However, they were now confined within the walls of their classrooms and homes, their outdoor adventures put on hold. The disappointment was palpable, and it weighed heavily on their spirits. As I thought more about this experience, I realized that it had been over a month since the children had been able to go outside for outdoor play due to the poor air quality. Despite this, outdoor play remained the most popular part of the day, according to a previous interview we had conducted with the children at the beginning of the semester. It was clear that the sandstorm had affected not just Kenny, but all of the children in some way. This experience taught me the importance of looking beyond the surface level when working with children. It also highlighted the power of art as a means of self-expression, even

for young children who may not yet have the vocabulary to articulate their thoughts and feelings in words.

Connections and dialogues with children come in different forms. Their views may seem irrational or illogical. However, in our evolving process of understanding the world, I don't think the most important thing is to agree on an answer; rather it is the moment in which we share and the interaction we have in that moment, which has value. This was illustrated too with George.

During lunch time, George had finished eating his rice and meat, and now stared at the window with two hands cupping his face. He had stopped eating, leaving the vegetables in the tray. 'George, how is today's lunch?' I asked curiously. 'Look, I ate the rice and meat.' 'Good for you, and how's the broccoli today? Do you want to have a try?' George showed his typical frowning eyebrows, then paused: 'umm…fine.' His right hand moved slowly, holding the spoon, one bite, another, chewing carefully. 'Is it good?' His eyebrows seemed more relaxed. He nodded, 'Yummy! Is it because it has magic?' Aha, here comes the typical question of George. 'Maybe this magic comes from the courage you take to have a try.' Followed by another bite, and another bite… until there's only one bite left in the tray. George stopped eating, dropped the spoon, and looked up to me, and said: 'I knew it! It's yummy, and it's not because it has magic. It's because I kept eating and I got used to it.'

How can I use my limited words to describe the children I encountered? Free, curious, philosophical would be approximations.

I wonder how my kindergarten teacher would describe me when I was a child. Honestly, my own memory of being in kindergarten remains small: small memory, small me. One of the scenes that I can recall was when I was coloring a huge fish with an orange crayon carefully to cover any white little spaces on the paper. A teacher was chatting with her colleague by my side. And when it came time for getting ready for sleep, that teacher said to me, 'you are too careful with this fish.' And then grabbed another orange crayon and colored for me - huge white spaces stood out,

but I didn't want it this way. What word would the teacher pick for me? Careful, focused, or more likely overcautious? When we describe something with 'over' or 'too', it implies a standard we have at heart. What I was not aware of back then is that I was expected to finish the drawing within that period of time. The reason why the teacher colored that fish for me was also for the sake of time and completion. What if we challenged the standard a bit more? Are we truly supposed to finish the drawing within that time? What would happen if we didn't? How did this standard come about at all?

While working in the kindergarten, I encountered similar situations wherein children needed more time to finish their works of art. I always recall this fish coloring memory. It is easy for me to decide not to act like my teacher but now, what else? What children need is the freedom to continue with their work during the next free play time. What can we do to meet their needs within this classroom? My co-teachers were quite experienced with this and suggested that we write their name on the picture and place it next to the window—so that the child could pick it up during another time. This idea rocked! Some children even tried hard to write their name in order to claim their own ownership of their creations. This case marked a key turning point in me trying to understand the classroom layout in our kindergarten, which needed to be fluid and designed to support our children.

Frequent interactions with children have helped me gain a deeper understanding of the iterative process in design thinking. As we spend time together each day, we get to know each other better. To further explore this point, I include here part of the recommendation letter that I wrote for a child in that class.

I was writing as a teacher in response to this prompt:

Please provide us with some specific illustrations that demonstrate the applicant's weaker points, or areas of continuing growth.

Based on my observation, Jonathan is calm and collected. When he feels confused or hurt in interpersonal communication, he would choose to avoid the conflict and tend to express feelings

and ask for help from trusted ones. Meanwhile, I believe that as he gradually grows up, he can show courage to approach conflicts and the way that he feels comfortable with to handle and make an impact on others (to help others to see the other side of things).

During Autumn Festival in school, our class decided to use 'fruit' as a clothing element, and most of the children chose to dress themselves into a kind of fruit, whereas Jonathan had his own idea: he wore a sweater with a carrot decoration and put on a cape and horns on the head. One kid did not see the carrot on his sweater, saying that he did not prepare fruit clothing. Jonathan seemed disappointed upon hearing that and frowned. Later, he talked to the teacher and expressed his feelings. With the teacher's guidance and dialogue with the classmate, they realized that everyone has their own idea of clothing and voicing out our own minds can better mutual understanding. Speaking of this story, I am happy for Jonathan as he is willing to ask for help from his trusted ones, and at the same time, I believe that with the development of his language ability and cognition, he can show greater courage to confront conflicts.

Illumination: Being and becoming

Journeying back and forth while becoming a teacher, how have my educational experiences spoken to my (re)encounters with design thinking in education, as a student as well as as a teacher? Through autobiographical writings and the use of the *currere* method, I have reflected on my interactions with family, teachers, and students and how these experiences have shaped my strong endorsement for, and commitment towards, incorporating Design Thinking in education. In the next chapter, I explore the themes that emerged from reflection on my own journey—my re-encounters—as well as with my encounters and re-encounters with my participants and their thoughts and memories.

Chapter Six: Interpretation and Findings

Design Thinking and Design For Change (DFC) were introduced into the school where I worked as a kindergarten teacher 3 years ago. I worked with the children to go through DFC 4 steps, make a "feeling" map of our rooftop playground, identify the issue that we want to work on, draw empathy maps while interviewing the users, brainstorm possible solutions, take actions and share with others with the video of this process. We finished the project and made our rooftop more tidy and more child-friendly to play in, but when I reflected on this experience, I realized I was more focused on advancing the project rather than paying attention to students' learning. I am able to name some of the things children experienced during the process through retrospect: Most children demonstrated their communication skills when they talked to their peers about the project and collected votes on the toys they would like to have on the rooftop, while some children didn't quite show their empathy. In fact, they showed little interest in getting to know the users of the rooftop through the empathy map, which is a tool to remind children to pay attention to what users saw, heard, felt, thought, smelled, expected for and would like to avoid. I believe there is space to make learning experiences more organic and rewarding. During the process, though, I sensed the pressure in terms of time and heard about the complicated feelings other educators had towards doing DFC with children. All of the above drove me to know about how other educators implement Design Thinking and DFC, inviting them to (re)encounter these experiences through interviews.

The goal of this section is to discuss the knowledge and insights that emerged from the interviews, while also relating them to the valuable insights of my autobiographical inquiry, weaving with the four lenses of encountering curriculum: spaces, plurality, intensities and charges (Strong-Wilson et al., 2019). As outlined in the methodology chapter, the process of identifying emergent themes through data comparison and contrast (Maykut & Morehouse, 1994) can be used to examine the findings of thematic analysis of the transcripts of interviews with the participants, coming back to the other two research questions: What kind of implications emerged from the process of teachers' facilitation of Design For Change (DFC) in the kindergarten in

China? What insights can we get when we analyze teachers' implementation experiences of Design For Change in China with the collaborative inquiry process of New Pedagogies for Deep Learning (NPDL)? How did their learning tie in with my own?

Three themes emerged, which I explored in this chapter through found poetry, my own words, and the participants' words.

The first theme is the importance of creating pauses and becoming aware. We recognize the value of taking a step back and reflecting on the learning process, allowing students to gain a deeper understanding and appreciation for their own learning.

The second theme focuses on respecting individual differences and autonomy, which emphasizes the importance of recognizing and valuing the unique perspectives and experiences of each student, allowing for a more inclusive and diverse learning environment. It also means creating opportunities for students to take ownership of their learning and explore their interests.

The third theme highlights the importance of empowering the silenced self, recognizing that traditional educational systems can often silence and marginalize certain voices and experiences. By incorporating Design Thinking, educators can create a more inclusive and empowering learning environment, allowing students, including ourselves, to feel valued and heard.

I explore each theme in greater depth in turn. I also explore how each theme maps onto one or more of the four curricular lenses for provoking curriculum encounters (and re-encounters) introduced in chapter three: spaces, pluralities, intensities and charges.

Theme 1: Creating pauses and becoming aware

The child sitting in the middle of the road
The child tirelessly mixing colors up
The child hesitating to have a try
The child savoring broccoli, taking time

Are living the pauses

Becoming aware

That dad is approaching against the flow
That there it is, a different canvas, new
That I am not ready, and it is fine
That the broccoli don't have magic.
Oh-oh,
I keep eating and get used to it.

During the process of *currere* and found poetry creation as well as the exploration through photo elicitation with my fellow interns in India, the theme of "creating the pause and becoming aware" stood out, which refers to how, in the seemingly non-stop course of life, one needs to become mindful of creating the time and space to become aware of what is happening, resonating with the first step of Design Thinking (to ideate) or of DFC: to feel.

When becoming an educator, I noticed that the pauses were made as the courses evolved in response to designing the learning experience. I once heard a high school teacher say that it was too boring to teach the same subject and content every year, and considered changing to another job. As a kid, I didn't have much passion for the teaching profession. However, by applying the design thinking framework, I began to become aware of the fact that we are designing learning

experiences with students who have thoughts, feelings, dreams and confusions. My "roundabout" at Riverside School in India inspired me, as it did when Mira ma'am at Riverside School in India used the morning meeting at the beginning of the month to make a pause and learn about the topics each child wanted to investigate during the month and incorporate them into her classroom; also, when Ranjhani ma'am created a pause to co-create lessons with other subject teachers to foster connections between perfume and poetry appreciation. In Peru, I took on the challenge of designing and conducting art lessons, choosing to make a pause first and learn about the expectations of the organization I was working for and also the children I was teaching, adjusting the learning objectives and experience design for each lesson as I interacted with the children.

Aria, who like me visited Riverside School in 2018, shared a profound and indelible experience similar to my own. She described the following encounter as deeply impactful and etched into her memory. While contemplating her own educational journey, she expressed a sense of futility when confronted with the redundancy of learning multiple methods to solve identical mathematical problems. Furthermore, she highlighted the dissonance between her teacher's insistence on studying ardently to gain admission to a prestigious university and the lack of practical application in her education. However, Aria's two-week observation at Riverside School provided her with a newfound realization: teaching can be intimately connected to real-life contexts and can be effectively applied in meaningful ways. She shared an observation of a presentation by second-grade students showcasing their learning outcomes on the human digestive system to their parents. They prepared a small model with a balloon for the face, scissors for the mouth, and play-dough to represent feces. The small intestine, large intestine, and stomach were constructed using materials commonly found in everyday life. Throughout the process, parents were actively involved as well. She said:

> I still vividly remember watching the children use scissors, which represented the mouth, to cut the food into small pieces, followed by blending to simulate the functions of the stomach. What struck me as particularly fascinating was their use of a stocking to mimic the small intestine, where the food was squeezed and pushed through, depicting the

process of absorption. It was a very visual representation. The remaining waste then entered the large intestine before being eliminated. After the children and parents completed the comprehensive presentation on the digestive system, they further extended their discussion to other systems in life such as education systems. They used the operation of a toy train to demonstrate the relationship between individual components and the entire system, emphasizing that if one part experiences issues, the entire system is affected. They engaged in a profound discussion, experiencing the learning process firsthand. Through this experience, the children not only learned about the digestive system but also explored aspects of life and society. I believe this kind of experiential learning is highly meaningful, extending beyond textbooks and easily applicable to real-life situations. (Interview, Aria, 02/2023)

Pauses were also made to become aware of the influence that teachers have on children. Reflecting on the autobiographical writing makes me realize how my teachers' response at schools had an impact on me, by reminding me of the purpose of being at school is to gain knowledge and prepare for the exams, while leaving behind my neglected self. While surprised by the confidence of students voicing out their ideas in Riverside, I came to realize the importance of a safe and conducive environment for dialogue provided inside and outside the classroom. "Because the course is student-centered and discussion-based at all times, they are allowed to say whatever they want. We don't try to shut them up with negative comments." Mira ma'an shared this with me during the recess. This is aligned with my observation on the class, where teachers supported students with different learning tools like mind maps and reflective questions, while they constructed the knowledge and ideas together. I consciously practiced making pauses and becoming aware of what was happening in the class in Peru as well, when I decided not to intervene with the child who was exploring the colors, and saw her figuring out more ways to enjoy her artwork. Working in a kindergarten in Beijing, I have also come to realize that for many children, expressing their thoughts and needs is something that needs to be supported, nurtured and practiced, since they are in the critical period of expanding and developing their language-based supporting system.

Quinnie believes that before with rigid curriculum, children in this school typically acquire known knowledge through teachers' instruction or teaching, and sometimes it may not be directly relevant to their lives or experiences, leading to low motivation and passivity. As for observing their surroundings and identifying areas that need improvement, children have limited awareness. Therefore, it requires teachers to guide them with such awareness, encouraging them to take action to mobilize their initiative. The DFC project provides an opportunity for children to reflect on their surroundings and identify areas for improvement. By taking action and making changes, children can experience the satisfaction of seeing their ideas become reality. This project had the potential to empower children to take charge of their own learning and inspire them to continue making positive changes even after the project has ended.

> To guide the students towards DFC projects, it is important for teachers to have an awareness that encourages them to empower the students and help them realize that they have the ability to make a difference. Through this guidance, the students can observe their surroundings and identify areas that need improvement, and then utilize their skills to effect change. I think after completing a DFC project, the students will be more inclined to think of new ideas and ways to help improve their community. In other words, the first DFC project could serve as a starting point for them to generate more innovative ideas in the future. (Interview, Quinnie, 02/2023)

Gine is a kindergarten teacher with five years of teaching experience. She found that after the outbreak of the pandemic in 2020, the children who came to the kindergarten were not very proactive in their thinking. She attributed this phenomenon of children being less inclined to think to the impact of the pandemic, as the children had been spending a prolonged period of time at home. This extended period of restricted social interaction may have resulted in a lack of stimulation, causing some children to become disinterested or unenthusiastic. However, DFC offers children the opportunities to think based on their own experiences, share their ideas, and work together to solve problems related to a certain space. It provides them with a problem-solv-

ing approach that teaches them to first think and feel, then consider the problem, and then implement and reflect.

> When I do DFC, I ask the children questions and take them to sense a certain space. During this process, the children are able to think based on their own experiences, share their feelings about it and work together to make the space they feel related to better. At this point, the children are actively thinking and able to express their ideas. DFC also provides the children with an approach to problem-solving that is valuable. If a specific problem is solved and it was something they had thought of themselves, then it is worth it because it allows them to form a problem-solving mindset. They learn to first think and feel, then consider where the problem is, and then implement and reflect. (Interview, Gine, 02/2023)

For Lynn, she believes that there is a distance between knowing and doing. Through her own personal experience, she found that starting from small things in daily life and tackling small problems will gradually build confidence.

> Recently, I was feeling very unwell and often felt weak. By chance, I came across the field of nutrition and read a story about a doctor who had a lot of medical knowledge but still faced problems that he couldn't solve on his own, such as his own illness. He then studied nutrition and put it into practice, which really improved his physical condition. This inspired me to believe that I could also change my physical condition for the better. I started to study nutrition, learn about different nutrients, and started with my own breakfast. After a while, I felt much better. I also noticed that my child's complexion was not good, and his diet was not balanced. So, I bought a plate with different nutrient sections and taught him about it. Now, he divides his food into different sections, eats everything on his plate, and can even eat more vegetables than before. (Interview, Lynn, 02/2023)

After making changes to her own diet and her child's diet, Lynn gained confidence in the process. Some parents had expressed concerns about their children's aversion to vegetables and an unbalanced diet, therefore Lynn started to integrate food education courses into the curriculum she was working on with Grade 1 students. For example, they learned about vegetable planting and sprouting, and even harvested their own produce to cook at home. This allowed children to understand where their food came from and sparked their interest in consuming healthy options. Furthermore, scientific experiments were also incorporated, such as measuring calcium in broth made from bones. Despite the traditional belief that bone broth is a good source of calcium for patients, the experiment revealed that the broth did not contain significant amounts of calcium. Lynn valued the fact that DFC encourages children to take actions and learn from the process.

The lens of "spaces" in provoking curriculum encounters takes on various dimensions and interpretations within the narratives shared by the educators (Strong-Wilson et al., 2019). It encompasses not only the physical environments where learning occurs but also the social, emotional, and experiential contexts that shape educational experiences. These stories collectively illustrated how the concept of "spaces" in education extended beyond physical settings to the intentional creation of environments that prioritize student agency, emotional well-being, and active engagement. The pauses and moments of awareness within these spaces enabled educators to establish meaningful connections with students, foster collaboration, and empower them to take ownership of their learning. By recognizing and valuing the affective, social, and experiential dimensions of education, these stories demonstrate the transformative potential of spaces when deliberately designed to support holistic growth and meaningful learning experiences.

(Re)encountering my journey in India alongside not only my fellow interns Ariel and Elaine but also Aria, who visited the Riverside School two years later than I did, has taken unexpected and diverse paths. "I always wonder if I am worthy of going to the Riverside School in India, whether in the past or present. Later on, I realized that in moments of life's confusion, I sometimes turned to design thinking to help organize my thoughts." (Interview, Ariel, 02/2023).

Connected with Ariel's doubt about herself, I come to realize that assessing the worthiness of this journey is not a matter of a simple yes or no. Instead, it is about the moments I have shared with the children throughout my lifetime, the process of running the curriculum, and numerous encounters and re-encounters that I may not have fully realized or anticipated at present. Aria's re-encounters evoke a profound sense of resonance within me, particularly as she recounts the moments of connection and inspiration she experienced at the Riverside School. It awakens a nostalgic longing, a yearning for the support and freedom I once had during my time there. This longing invites introspection and reflection, prompting me to delve into the complexities of my past narratives and question the unexamined patterns I have perpetuated. Through the lens of intensities, I am prompted to explore the depths of my emotions and delve into the intricate nuances of my experiences. This lens encourages me to critically examine why certain working environments have made me feel included, motivated, and accomplished, while others have not. It invites me to delve into the subtleties of these encounters, seeking to understand the underlying factors that contribute to such varying outcomes. In essence, this leads me to the second theme that emerges from my interpretations.

Theme 2: Respecting individual differences and autonomy

A huge yellow color block quickly created to represent the sandstorm
had overshadowed all other stories, connections, and possibilities on the paper.
Did we hear the child's voice?

A festive outfit with the theme of fruits is not only about
dressing oneself as a huge fruit, it can also just be a carrot decoration.
Did we talk about it?

Within a small table made of play-dough, came a calm space to try out their design.
Each child created their one and only bracelet for Mother's Day.
Did we try to make it happen?

Artworks tell the stories of each individual, or even more.
Life is a journey where each of us blooms, and grows.

I was particularly drawn to Professor Cheng's remarks about the composition of the intern team for the Indian journey: Elaine's high sensitivity, Ariel's keen insight and self-awareness, and Tianqi's tireless curiosity and exploration; all sure to produce brilliant sparks (I.H. Cheng, personal communication, July, 2016). From the early days, it was evident that we had differences: differences in terms of focus, expression and logic. Such differences made for a more comprehensive, diverse picture of Riverside School; they also inspired me to ponder my own issues and engage in a dialogue with myself to uncover underlying educational beliefs and assumptions. As Professor Cheng gently reminded us at the end of the internship (personal communication, July, 2016):

Life is not a competition, life is a journey where each of us blooms. Just let out your own color and fragrance. There will be a he who sees it, there will be a she who loves it, there will be a they who stay with it, and there will be a you who knows it: take your time, all is well.

I didn't come to realize the impact these poetic words had exerted on me, until I created the artwork below three months later. Artwork does tell its own story, or even hints at much more (See Figure 4).

Figure 4: Illustration created in Barcelona Spain in October 2017

As teachers, who are bestowed with power on the spot, what else can we do to observe, ask questions, try to understand the child, identify their current needs, create a safe environment for them to recognize themselves, while nurturing a life-long love of thinking and learning? The struggles I encountered with letting go of the need for structure and control in the learning environment prompted me to question the learning experiences I had in my early years. As an educator, I con-

stantly faced the challenge of learning how to respect a child's construction process and be comfortable with the ambiguity that I may encounter during the learning journey. It is an ongoing process that has required me to be open-minded and flexible. However, I believe that this is one of the most powerful skills or mindsets that I strive to possess as an educator: to support and guide children as they navigate their own paths of learning and development, while also allowing them to take ownership of their learning experiences.

At Gine's school, each class was assigned a different space on campus to "make the change" within 6 weeks by the administrative team. As they said, they wanted to make the spaces safer and more beautiful, but for Gine, it felt like a top-down assignment, something that was imposed on her. She further expressed that she would like to give more freedom to children to decide which part of the campus they will be working on since she found that children did not relate to the space that was distributed to them last time.

> Actually, when I first thought about it, I wondered why we had to divide the playgrounds among ourselves in the beginning. I think children should choose for themselves, and it doesn't have to be just about the playgrounds. If a child discovers a corner of the campus that needs improvement, they should be able to choose it. When they discover it themselves, even something as simple as putting a flower pot in a corner, they will find it meaningful, no matter how small it may seem. So the next time, we should take the children for a walk and look around the entire campus, and then focus on the places they really want to change, the things they really care about. (Interview, Gine, 02/2023)

The significance of teachers' autonomy in organically integrating Design Thinking into their teaching extends beyond the mere question of its presence. Equally crucial is the recognition and support given to their autonomy, ensuring that it is respected and nurtured. As a new initiative for both schools, Design Thinking and DFC are integrated into the current curriculum differently. Gine, Quinnie and Lynn need to particularly make time for DFC, while having the same workload of existing curriculum and the pressure from regular inspection from the Board of Educa-

tion, whereas Tam and Juana thoughtfully blend Design Thinking into their curriculum, providing strategies and tools for students in order to achieve their learning goals.

Quinnie and Gine both struggled with time and balancing with the existing curriculum.

> Actually, I think what we need more to support DFC is time, because the curriculum taught on campus already occupies a significant portion of the children's learning time. If we want to implement DFC, we need to follow the four-step process, and any project needs at least one or two months to be fully realized. (Interview, Quinnie, 02/2023)

Gine was working with children of 3 years olds, and it was more challenging for them as different projects were intertwined with each other.

> I think this project needed to be completed within a tighter timeframe because we were trying to make time for it apart from our existing curriculum, and it took too long to complete each step. Children didn't remember much about our previous discussion and sometimes didn't know why we were doing the project. Our class was already busy with other things, so the children's minds were quite jumbled at the time. (Interview, Gine, 02/2023)

In the other school where Tam and Juana work, they decide to integrate Design Thinking or DFC into their existing curriculum and project-based learning. Juana shared that in the kindergarten, they designed the activities based on observation and understanding of the children, coupled with material placement and exploration time for the children. There was a time when the general learning goal was to promote more effective teamwork. During this process, children needed to cooperate, do hands-on activities, operate, and create. Throughout the entire process, they also provided them with some strategies and methods for resolving conflicts that may arise between them and their peers.

> The rotation project started when children noticed the clock hand turning. We provided gear toys and bamboo dragonflies for them to explore rotation, and they started to discover rotating objects everywhere, like conveyor belts and fans, which bring convenience to people. Based on that, they wanted to use this knowledge to help others, so we provided chil-

dren with designing tools and the design thinking framework. For example, when helping different people, we need to understand their needs and design models with them. Therefore, we helped them understand how to define problems, design models, brainstorm, analyze which strategy was the best, and used these design thinking frameworks to help them build the prototype. For example, when we asked the security guard, he told us that when they had to move the beds into the classroom, they would find the beds inside the cabinet and had to use a lot of strength to lift them up. So, the children in our group designed a ramp and a bed with wheels to make it easier to move the bed. (Interview, Juana, 02/2023)

Time was not a concern for Tam either, as they integrated Design Thinking into the Project-Based Learning (PBL), which is a separate course in their school. They had about one month per semester, during which each grade was allocated approximately 17 to 20 sessions to work on it. One of the projects they worked on was about health and exercise, with the general learning goal of user-centeredness and empathy. Students' project was to select a person on campus or around them as the user and help them to design a health plan.

A lens of "plurality" emphasizes the importance of acknowledging and embracing the multitude of perspectives, experiences, and ways of existing that exist within the world (Strong-Wilson et al., 2019). The understanding of the present as constantly evolving and transformative is a perspective rooted in the recognition of plurality, diversity, and reconciliation (Grumet, 2015b). It implies that by acknowledging the ever-changing nature of the present and embracing the plurality of experiences, we can strive towards reconciliation and a deeper understanding of ourselves and the world around us. It involves adopting a mindset that is receptive to the "other" and being open to engaging in dialogue and exchange with individuals who hold different viewpoints or come from diverse backgrounds. While it can be challenging to navigate the uncertainties that come with children's learning processes, it is also incredibly rewarding. It is inspiring to witness the unique and creative ways in which children encounter life and express themselves, and to be a part of their growth and development. As I continue to work with children, I am constantly learning from them, while becoming a teacher. Ultimately, I believe that the ability to embrace

ambiguity and respect children's constructing processes is a key component of creating a positive and impactful learning environment.

In the preceding teacher stories, curricular intensities manifested as teachers' encounters with the intricate task of balancing multiple curricula while attending to the unique needs and circumstances of their students. Within these narratives, I witnessed the teachers' struggles as they navigated this delicate equilibrium, but I also witnessed their wisdom, creativity, and unwavering dedication to the vibrant lives of their young learners and the pursuit of educational justice. By engaging with curricular intensities, teachers were stirred to experience a range of emotions and were compelled to question the established norms and practice that govern education. This profound process of emotional engagement and critical inquiry awakened our consciousness, enabling us to recognize the transformative potential inherent in even the most ordinary moments of teaching and learning. It underscored the profound impact that educators could have on shaping a more inclusive and just future for all. In essence, engaging with curricular intensities acted as a catalyst for powerful emotional responses and critical reflection. It ignited a profound journey of self-discovery and prompted teachers to question the existing structures and conventions in education. This transformative process empowered educators to envision and actively work towards a future where education is more equitable, inclusive, and conducive to the holistic growth and development of every learner.

Theme 3: Empowering the silenced self

We are not unfamiliar with coercion,
Having a lot to say and ask, longing for dialogue,
Ending up swallowing them all, souls going unnoticed,

Imagine all the children
letting their thoughts take flight, starting to shine.
In sharing our truths, we find our might.

Gine shared that in her teaching experience, she often encountered children who asked questions, and she felt that some of these questions would be well-suited for using DFC to approach and solve the problems that are bothering them. She believed that by encouraging children to ask questions and providing opportunities for them to solve problems using DFC, their curiosity and creativity can both be nurtured.

Juana shared Gine's viewpoint and provided an example to illustrate it.

> During my time interacting with kindergarten children, they would sometimes ask questions or express complaints. I think using design thinking or DFC would be very appropriate in these situations. For example, every Friday, the children need to carry their heavy blankets to the school gate, and many of them find it very difficult. I think this is a great opportunity to engage them in a DFC challenge and see how we can solve this problem (Interview, Juana, 02/2023).

In Juana's class, the children noticed that the staff who helped them move the beds were also struggling with the weight, so they decided to use their newly acquired knowledge of "rotation." They designed three models based on this concept, which then turned into actual products. However, during the process of turning models into products, they needed to raise funds. They then took the initiative to organize a second-hand market to sell their toys and promote their ideas to

others. Juana believes that DFC can empower children to take an active role in problem-solving and the creative process, which contributes to building up their confidence.

For her part, Aria's teaching experience resonated with Juana's and Gine's; all shared similar observations. Aria discovered that empowering children to confront problems voluntarily and skillfully fostered a sense of ease and freedom. When working with 3-year-old children, Aria noticed that they were learning to engage in collaborative play but sometimes encountered difficulties that led to conflicts and tears. By engaging the children in discussions about their emotions and exploring potential solutions inspired by the four steps of DFC, Aria witnessed a remarkable transformation. The children were able to apply the problem-solving skills learned the next time they encountered similar challenges.

Design thinking is a systematic thinking process that helps educators focus on specific steps or problems while also requiring them to step back and examine the big picture. To effectively introduce design thinking to children, educators must first acquire this mindset themselves. As they apply this way of thinking to various educational challenges, they can develop essential skills such as empathetic observing, problem definition, ideation, prototyping, testing, and revising. By embracing this iterative process, educators can discover groundbreaking solutions that cater to the unique needs of their students, ultimately fostering an environment of educational innovation.

When Design Thinking was introduced to the schools, Lynn, Quinnie and Gine participated in a lecture given by a curriculum development specialist and there was no other professional development or support provided. Based on Juana and Tam's account, they have read several books on Design Thinking, and attended workshops provided by IDEO, a global consulting firm that designs innovative and human-centered products, services, and experiences for businesses and organizations. They also are engaged in reflective sessions on a regular basis.

During discussions on professional development and support, some participants expressed a desire for additional resources such as instructional videos, age-appropriate activities, games and strategies. Gine initially felt discouraged as the younger children did not seem to understand the project well. As children walked around the school, they didn't really perceive anything. Then, when they did a lead-in activity where they read a book about decorating a wall, most of their ideas were finding a blank wall and saying that they wanted to make it look better. She would like to learn about more age-appropriate activities, games and strategies (Interview, Gine, 02/2023).

Lynn also has a story to tell about what support she would like to have. Being a philosophy teacher for elementary school children, her philosophy classes guided children to question and think like philosophers by discussing real-life problems with them, helping them become thoughtful, reflective, considerate, and wise individuals. She thinks for children at this age conversation is an activity that doesn't offer much stimulation, therefore normally she would bring in a stimulus like a picture book to guide into the themes, such as friendship and rules. She finds it helpful to have a bank of stimuli that categorizes books and teaching resources for each topic so that she can easily access them when she needs to discuss a particular topic with children. She believes that this Lego-style support is suitable for experienced teachers who only need the building blocks and can use their imagination and experience to construct what their students need, adjusting the proportions according to their students' needs. Similarly, for Design Thinking and DFC, considering the learning goals are competencies like empathy, creativity, communication, she considered that it would be great to have games, warm-up activities and strategies with the aim to nurture these competencies.

Reflecting on the current professional development sessions, Aria expressed her enthusiasm for the prospect of engaging in regular collaborative discussions with a cohort of other teachers. She recognized the value of such talking sessions, where educators can come together to share their experiences, insights, and challenges. Aria looked forward to using these collaborative sessions as an opportunity to brainstorm themes and activities based on the specific interests and needs of

their students. By engaging in collective brainstorming, teachers can tap into their collective creativity and generate a wider range of ideas. This collaborative approach ensures that the activities and themes they develop are more inclusive, relevant, and engaging for the diverse group of children they teach.

Looking back on my lived educational experience, I see myself as someone who was repeatedly silenced and neglected in the teacher's office, due to fear of authority or a misunderstanding of the teacher's role in the exam-oriented education system. It was the seed planted during that time that led me to take a roundabout, winding, and detoured path, trying to find answers for the temporarily closed deviation within myself. In the process, more questions unfolded: starting from feeling unsettled yet stopping launching so as to engage in that learning situation, to recognizing a state of "not knowing" as an opportunity, starting to be comfortable and grow from it. Meanwhile, I also realized that for me this is a mindset that I need to constantly nurture. Remembering how I have gone so far by recounting autobiographically and conversing with teacher participants is not only a kind reminder of the unsettled feelings I carried and the lessons I learned along the journey but also an empowerment within, which endures and returns upon encountering and re-encountering.

The lens of "intensities" provoked by curriculum encounters highlights the emotional and affective aspects of educational experiences, delving into their influence on learning and curriculum (Strong-Wilson et al., 2019). Intensities underscores the significance of acknowledging and actively engaging with affective moments within educational contexts. By immersing ourselves in experiences *as* they unfold, both educators and learners can cultivate a profound and nuanced understanding. Aria discovered the transformative power in addressing children's emotions and encouraging them to confront and solve problems. By engaging in open discussions with the children about their feelings and brainstorming possible solutions inspired by the four steps of DFC, Aria witnessed a notable shift in their ability to handle conflicts and collaborate more effectively during playtime. This exemplifies recognition and exploration of affective moments in the educational setting, ultimately leading to enhanced learning outcomes. Similarly, Juana and

Gine encountered situations where students experienced struggles or difficulties in their educational journeys. However, by actively embracing and addressing the emotional dimensions of these challenges, they were able to create an environment where students felt supported and empowered to overcome obstacles. Through open dialogue, reflection, and providing opportunities for self-expression, they nurtured a deeper understanding of their students' unique experiences, fostering growth, resilience, and a more holistic approach to learning.

On the other hand, the verses at the beginning capture the sentiment of individuals longing for dialogue and a platform to express their thoughts and questions, only to find themselves silenced and unnoticed. This resonates with the notion of "charges" as mentioned earlier, which encompass responsibilities, commitments, and movements. In the context of teaching, these charges manifest as the unspoken voices and untapped potential of children. These experiences highlight how recognizing, embracing, and engaging with charges in the form of children's questions, emotions, and problem-solving abilities can lead to profound transformations in education. By creating spaces for children to express their thoughts and addressing their concerns through methodologies like DFC, their voices are heard, their charges are activated, and their potential is unleashed. This process of acknowledging and harnessing charges facilitates the growth, learning, and empowerment of children, ultimately fostering a more inclusive and engaging educational environment.

Postscript

I am thankful for the chance to engage in meaningful conversations with these educators and gain insights into their actual teaching practices, the challenges they face, as well as the successes and inspirations they have encountered along the way. Through these conversations, I have gained a better understanding of Design Thinking and DFC from different perspectives and at various levels.

During my interviews with teachers, I especially gained insights into the challenges associated with implementing the DFC. The main focus of this approach is not necessarily about having students and teachers tackling large-scale issues or solving complex problems. Rather, it centers on supporting children to accomplish the challenges they came up with, identifying the specific abilities that teachers wanted to support their students in developing, and designing course content that enabled students to demonstrate these abilities.

During the re-encountering process together with participants, I also discovered that each teacher brings their own expertise, characteristics, and unique experiences of growing together with their students. At times, when teachers want to lead students to see different perspectives, it can be challenging to integrate different subject areas due to the compartmentalization of knowledge. However, one teacher's question can be answered by another teacher's sharing, thus creating a ground for charges due to their encounters with the curriculum and one another. A strong partnership system can open spaces, bringing more diversity (plurality) to curriculum development, while interdisciplinary collaboration can help expand as well as intensify students' problem-solving capabilities. By combining the strengths and resources of each teacher, a more comprehensive and holistic approach to education can be achieved, which in turn can benefit students in their overall growth and development.

The fourth lens of provoking curriculum encounters, charges, refers to complex and diverse ideas or forces that often remain obscure or poorly understood until their effects become apparent. In the context of education, charges can be seen as underlying influences that shape learning experiences and outcomes (Strong-Wilson et al., 2019). By actively acknowledging and engaging with these charges, educators can gain a deeper understanding of the hidden factors at play, which can lead to more meaningful and transformative learning experiences for students. The discussion above exemplifies the concept of charges through engaging educators in conversation and the insights gained from their re-encountering with the teaching practices. Design thinking has made me realize that I myself have a responsibility to become a driver—and charge—of teaching and learning innovation. While I do not need to have all the answers, I need to be will-

ing to try new things, dream big, and exercise patience in testing designs that emerge in the process—and encourage and support others in the process. Design thinking is a complex process that everyone struggles with in their own way. However, we continue to believe in and enjoy the beauty it brings. This belief and perseverance sustain my hope within myself and in the world.

Chapter Seven: Discussion and Conclusion

You live your life as if it's real, a thousand kisses deep.

(Leonard Cohen, 2001)

Someday—if we remember the past, contemplate the future, analyze,

then mobilize in the present—we can teach with the dignity and respect the profession deserves.

For you, let this someday be today.

(Pinar, 2012)

In this chapter, I revisit the collected data and provide a concise overview of the findings that have emerged through my analysis. Additionally, I explore the limitations of this study, acknowledging any constraints or restrictions that may have affected the research process or the interpretation of the findings. Furthermore, I delve into the implications of the study, considering the potential impact and significance of the findings in the broader context of education and teaching practices. Finally, I conclude the chapter by sharing my final reflections and thoughts, encapsulating the key takeaways and lessons learned from this research endeavor.

Review of Findings

This qualitative research examined my (re)encounters with Design Thinking and Design for Change (DFC), using the method of *currere* to critically reflect on my own educational journey as a student and teacher. The process of returning to these lived key moments, which I conceptualized as encounters and as re-encounters, was also supported by the reflection [(re)encounters] and perspectives of eight other participants from China and Taiwan. The aim was to investigate the discoveries, challenges, and reflections of educators as they integrated Design Thinking into their thinking and teaching approaches. The research questions that guided this study were as follows:

1. What have been my own educational experiences (as student and teacher) within and leading up to my participation in Design Thinking and Design For Change?
2. What kinds of insights and implications can arise through analyzing teachers' implementation experiences of Design For Change in China?
3. What insights can we get when we analyze teachers' implementation experiences of Design For Change in China with the collaborative inquiry process of New Pedagogies for Deep Learning?

What have been my own educational experiences (as student and teacher) within and leading up to my participation in Design Thinking and Design For Change?

Memory drops on her, so does the adventure.

Where does she come from? She's from home,

A place where she doesn't have the fear to show who she is.

She's not unfamiliar with coercion,

On the playground, behind the test scores,

Having got a lot to say,or rather, to ask,

Ended up swallowing them all.

Many precious moments arrive (un)expectedly,

When she tried to stand up for the school janitor,

Or George decided to try the magical broccoli.

Some souls go unnoticed, while others start to shine.

Pause, before we are about to define;

Connect, leads to inspiration,

Not by chance, but by design,

where each of us bloom, ongoing, creating.

from… to… What if? Aha!

Out of the mess, grow the insights.

An adventure out of the planned way,

A chance to explore, to stop, to stay.

A twist and turn, a shift in view,

Self-discovery, growth and change,

From being home to "creating home"(Wang, 2004).

Ongoing, creating.

Through engaging in autobiographical writings inspired by the *currere* method and arts-informed method of poem creation, I delved into re-encounters with my memories with family, teachers, and students. These encounters had significantly influenced my resolute support for the integration of Design Thinking in education, and more specifically, in teaching. They shaped my understanding and perspective, highlighting the importance of fostering an environment where individuals feel comfortable expressing their true selves without fear. When encountering instances of coercion and suppression in schools, in the form of societal expectations and standardized testing, I have often found myself suppressing my own thoughts and questions. During my stay at Riverside School, I witnessed a student-centered approach to teaching that emphasized the integration of design thinking into the curriculum. Teachers at the school designed learning experiences that were relevant to students' lives and that encouraged their active participation and collaboration. The use of design thinking in education was evident through activities such as problem-solving projects and the incorporation of real-life experiences into lessons. The school also focused on professional development for teachers and created a supportive and non-judgmental environment for learning and growth.

Inspired by Riverside School, I embarked on a journey to create a curriculum that would meet the needs of students and enhance their learning experiences. By observing and consulting with teachers and students, I developed a series of art sessions focused on exploring the design of everyday objects. These sessions incorporated accessible materials and engaged students of various ages. From outdoor plant hunts to creating paper airplanes and book-making, the art classes provided valuable personal growth for both the students and myself. It was a fulfilling experience to design and facilitate these sessions that resonated with the students and deepened their understanding of design and creativity.

Upon returning to China to teach in a kindergarten, I re-encountered the importance of truly seeing each child and building meaningful relationships with them. By focusing on each child as an individual and respecting their unique perspectives, I witnessed the vibrant thoughts and surprises that emerged from these young lives. It became clear to me that as a teacher, it is both a privilege and a responsibility to embrace ambiguity and value the learning process over standardized answers.

What kinds of insights and implications can arise through analyzing teachers' implementation experiences of Design For Change (DFC) in China?

We are not unfamiliar with coercion,
Having a lot to say and ask, longing for dialogue,
Ending up swallowing them all, souls going unnoticed.

A huge yellow color block quickly created to represent the sandstorm
had overshadowed all other stories, connections, and possibilities on the paper.
Did we hear the child's voice?

A festive outfit with the theme of fruits is not only about
dressing oneself as a huge fruit, it can also just be a carrot decoration.
Did we talk about it?

Within a small table made of play-dough, came a calm space to try out their design.
Each child created their one and only bracelet for Mother's Day.
Did we try to make it happen?

Imagine all the children,
letting their thoughts take flight, starting to shine.

In sharing our truths, we find our might.

The child sitting in the middle of the road
The child tirelessly mixing colors up
The child hesitating to have a try
The child savoring broccoli, taking time

That there it is, a different canvas, new
That I am not ready, and it is fine
That the broccoli don't have magic
Oh-oh,
I keep eating and get used to it.

Living the pause, becoming aware,
Life is a journey where each of us blooms, and grows.

I explored encounters in the context of design thinking from the perspective of teachers, incorporating the reflections and (re)encounters of eight other participants, most of whom have also embarked on the path of teaching. The themes of creating pauses and spaces, acknowledging individual differences and autonomy, and empowering the silenced self emerged as key to our ongoing involvement as teachers. Then three themes were tied into a theorizing of provoking encounters and re-encounters through the four4 lenses of spaces, plurality, intensities, and charges (Strong-Wilson et al., 2019). The interpretation of (re)encounterings highlights the potential of Design Thinking to create more engaging, inclusive, and empowering learning experiences in the context of an exam-oriented education.

Space. This includes both physical spaces and the broader social, emotional, and experiential contexts that shape learning experiences. The importance of creating time and space for reflection, observation, and mindful awareness within educational settings was emphasized (theme 1:

creating pauses and becoming aware), for students and for teachers as well. The examples mentioned in the analysis, such as morning circles before subject learning, collaborative lesson planning, and experiential learning projects, demonstrated how intentional design of spaces can foster meaningful interactions and transformative learning. Re-encountering my educational experiences, I was aware of the impact of teachers on students and recognized the traditional emphasis on knowledge acquisition and exam preparation, often neglecting the personal development of students. However, the encounters at Riverside School showed me the importance of creating a safe and inclusive environment for dialogue, where students feel empowered to express their ideas without fear of negative judgment. Teachers at Riverside supported students through student-centered and discussion-based approaches, using tools like mind maps and reflective questions to co-construct knowledge. Riverside School valued the importance of observing, understanding, and catering to the unique needs of each student, thereby creating an environment that enabled self-recognition and personal growth.

Furthermore, participants' encounters also highlighted the necessity of establishing an empowering space in education where individuals, particularly children, are given the opportunity to have their voices heard. The creation of such spaces emphasized the value of engaging in meaningful dialogue, posing thoughtful questions, and addressing the emotional challenges that students may encounter. Aria observed that when she encouraged young children to proactively and effectively address their own problems, it had a positive impact on their overall well-being. While working with 3-year-olds, Aria noticed that although they were learning to play together, they sometimes faced challenges that resulted in conflicts and emotional distress. However, by facilitating discussions about their emotions and guiding them through the four steps of Design for Change (DFC), Aria witnessed a remarkable change. The children developed problem-solving skills and were able to apply them in future situations, leading to improved outcomes and a sense of empowerment. The implementation of Design for Change (DFC) within educational institutions has paved the way for enriching and inclusive educational journeys. The examples highlighting design thinking and the utilization of DFC demonstrate the creation of an environment that nurtures problem-solving, collaborative endeavors, and innovative exploration. However, the successful

integration of DFC relies on several essential elements, as revealed in the interviews with participants. One key element is the school culture, which serves as the backdrop for DFC implementation. A supportive and inclusive culture, where educators feel empowered and motivated, can significantly enhance the integration of DFC. Conversely, a culture characterized by top-down assignments and limited autonomy might pose challenges to its successful adoption.

Plurality. The lens of "plurality" emphasizes the significance of recognizing and embracing diverse perspectives, experiences, and ways of existing (Strong-Wilson et al., 2019) . It highlights the understanding that the present is constantly evolving and transformative, rooted in the acknowledgment of diversity and the pursuit of reconciliation. By embracing the ever-changing nature of the present and the multitude of experiences, we can work towards reconciliation and gain a deeper understanding of ourselves and the world. The analysis highlighted the diverse perspectives and experiences of children and teachers from different cultural and educational contexts, which ties closely with theme 2: respecting individual differences and autonomy. By embracing ambiguity and valuing the process of learning, educators encouraged students to explore multiple perspectives and engage in collaborative learning. A lens of plurality is further emphasized through the concept of embracing a multitude of perspectives, experiences, and ways of existing. This openness to the "other" and engaging in dialogue with different viewpoints or backgrounds contributed to a more inclusive and diverse learning environment. An iterative process enabled educators to continuously adapt and refine their approaches. By integrating design thinking, educators fostered a culture of openness, collaboration, and empathy, ultimately enhancing the learning experiences and outcomes for all students.

In Gine's school, the top-down assignment of spaces for change highlighted a lack of plurality and student agency. Gine believed that children should have the freedom to choose the areas they want to work on, allowing them to find personal meaning and significance in their projects. This approach acknowledged the individual perspectives and interests of children, fostering a sense of ownership and empowerment in their learning process. On the other hand, Tam and Juana's experiences demonstrated a more pluralistic approach to integrating design thinking. They blended

design thinking into their existing curriculum and project-based learning, providing strategies and tools for students to achieve their learning goals. By observing and understanding the children, they created opportunities for exploration and collaboration, allowing students to discover their own interests and needs. This approach embraced the plurality of student perspectives and encouraged empathy and user-centeredness. Quinnie and Gine's struggles with time constraints and balancing curricula also reflected the challenges faced when trying to integrate new approaches into existing educational systems. This highlighted the need to consider the plurality of contexts and constraints that teachers operated within, recognizing the complexities they face. Meanwhile, Tam and Juana's approach demonstrated a recognition of the diverse needs and interests of the children, allowing for a more organic integration of Design Thinking and DFC. Their emphasis on observation, understanding, and collaboration fostered a sense of inclusivity and encouraged children to engage in meaningful problem-solving. This reflected a perspective rooted in the recognition of plurality, where diverse voices and perspectives were acknowledged and integrated into the learning process.

Intensity. The lens of intensities offers a framework to explore the emotional depths and nuances of experiences, as well as the varying outcomes and impacts they have on individuals. Design Thinking in education entailed creating immersive and captivating learning experiences that surpassed conventional content delivery methods. By integrating real-life situations, interactive activities, and experiential learning, educators stimulated student motivation, curiosity, and active engagement. The examples provided, such as designing art sessions, constructing models of the digestive system, and incorporating food education, illustrated how intensity can be cultivated through meaningful educational encounters. The text further explored the affective dimensions of the learning process, underscoring the transformative potential of addressing emotions, and actively confronting challenges. These examples demonstrated how acknowledging and exploring the intensity of these affective moments led to enhanced learning outcomes and personal growth. In my own interactions with students, I experienced intensity in the form of letting go of control and embracing ambiguity to nurture the child's curiosity and creativity. Intensities arose from the

challenges and rewards of navigating uncertainties. The emphasis on transformative encounters and reflections further entailed intensities in encounters and re-encounters.

This lens is connected with theme 1 of creating pauses and becoming aware, as well as theme 3 of empowering the silenced self. Aria's re-encounters at the Riverside School also evoked a profound resonance within me, awakening a nostalgic longing and yearning for the support and freedom experienced during our time there. This intensity of emotions prompted me to engage in introspection, questioning our past narratives and examining the unexamined patterns that have influenced our journey. The lens of intensities encouraged me to critically examine the factors that contribute to the feelings of inclusion, motivation, and accomplishment in certain working environments. In the teachers' stories, they faced the challenge of balancing multiple curricula while meeting the unique needs of their students. This balancing act stirred a range of emotions and prompted critical reflection. Despite the struggles, the teachers demonstrated wisdom, creativity, and unwavering dedication to their students and educational justice. Engaging with these challenges awakened their consciousness and highlighted the transformative potential in everyday teaching moments. It emphasized the significant role educators play in shaping a more inclusive and just future. Engaging with curricular intensities sparked powerful emotional responses and critical inquiry, leading to self-discovery and a reimagining of education for equity and holistic development.

Charges. Interpretation and analysis brought forward the multifaceted charges associated with (re)encountering Design Thinking in educational settings, especially in theme 3 of empowering the silenced self. One crucial aspect in the incorporation of DFC, arose from participants' interview, was finding a harmonious balance between the existing curriculum and the integration of this innovative approach. Educators faced the task of seamlessly weaving DFC into their established educational framework, which necessitated careful thought and planning. Time constraints and competing priorities could sometimes pose hurdles to the effective implementation of DFC, whereas some teachers also found that DFC can be blended into this living curriculum and support children's development. Moreover, supporting teachers through appropriate professional de-

velopment opportunities is paramount for the successful implementation of DFC. Teachers require access to additional resources, such as instructional videos and age-appropriate activities, to effectively incorporate DFC principles into their teaching practices. Collaborative sessions and reflective discussions can further facilitate the exchange of experiences and the generation of innovative ideas.

Engaging with these charges involved being aware of their presence, exploring their implications, and actively incorporating them into teaching practices. Firstly, it emphasized the responsibility of teachers to create safe and supportive environments where students feel empowered to express themselves. This charge entailed recognizing power dynamics and fostering dialogic interactions that valued student agency and active participation. Additionally, the analysis carried a charge of believing in unlimited potential and lifelong growth, highlighting the responsibility of educators to nurture the construction process of children and instill a love for thinking and learning. Design thinking and DFC were presented as a mindset and a framework that facilitated this charge, empowering children and teachers both, fostering confidence, and nurturing autonomy. Lastly, the recognition of the evolving nature of charges also emphasized the importance of reflection and adaptability in teaching practices, as the understanding and impact of these charges may change over time.

What insights can we get when we analyze teachers' implementation experiences of Design For Change in China with the collaborative inquiry process of New Pedagogies for Deep Learning?

Given that the learning objectives and learning experiences of Design For Change (DFC) align with those of the New Pedagogies for Deep Learning (NPDL) framework as discussed previously, and that the NPDL framework provides practical tools and processes to promote effective teaching practices (Fullan et al., 2018), by examining DFC implementation within the collaborative inquiry process, insights were gained regarding the importance of assessed learning goals,

using data and evidence to grow from current practices, and engaging in recursive collaborative reflections.

First and foremost, establishing learning goals that are evaluated together with clear criteria for success enables educators to refocus on the learners and their growth. Drawing from our own experience with DFC implementation, Gine, Quinnie, and I approached it as a project, adhering to the four-step process while ensuring that children had enough room to demonstrate their agency. However, Gine has shared that sometimes children did not express much when being asked how they felt or what bothered them (Interview, Gine, 02/2023), and Quinnie also mentioned that it ended up with educators deciding the project topic for children (Interview, Quinnie, 02/2023). Their experiences resonated with mine, as I found it easy to lose track of children's learning while focusing on the project completion. According to a collaborative inquiry process, designing deep learning starts with assessing where students are, their needs, strengths and interests, considering the curriculum expectation (e.g.: empathy, communication, creativity) and establishing the learning goals based on the assessment. Success criteria, which are defined as the evidence that would document that the learning goal has been achieved, should also be taken into account. During the interviews, some teachers also mentioned that setting one or several general learning goals facilitates their overall learning design. For example, Juana set the learning goal of enhancing communication skills based on her understanding and observation of the children, followed by the success criteria of "student can use the strategies provided to resolve conflicts in teamwork" (Interview, Juana, 02/2023). Juana described the learning goal as a thread embedded throughout the project and would integrate warm-up games and mini workshops related to teamwork during the process.

Another insight from linking DFC with the collaborative inquiry process of NPDL is that using data and evidence to grow from current practices facilitates the integration of Design Thinking and DFC. Based on the interviews I conducted with teachers, a significant pressure they faced was finding a balance with the existing curriculum, as they had to make time for DFC alongside their already packed schedules. However, are different courses and projects really incompatible

with each other? Design thinking reminds us to design the curriculum with a children-centered mindset, while NPDL inspires us to base our teaching practices on student data to inform the next cycle of learning. How can we grow from the current practices while integrating Design Thinking and DFC? Lynn and Juana both shared their stories. For Lynn, as she had sessions of philosophical dialogue with children in her class about the issues they encounter in life on a regular basis, she has made this a lead-in activity for the first step of DFC, to help children have a bigger picture of the topic they explored (Interview, Lynn, 02/2023). Juana integrated DFC into a project on rotation that was conducted over the course of several months with 5-year-olds. The project began with observations and exploration of rotating objects, such as gears and bamboo dragonflies, which the children found interesting. After further discussion and learning, the children discovered that rotation is a concept that makes life more convenient, such as with wheels and conveyor belts. Juana then led the children to apply this knowledge and help the staff in the school community through the DFC project. For example, they found that it was too heavy for safeguards to organize their beds, so they went on and designed a ramp and a bed with wheels to help them move beds into the classroom. They also created a tool to help the cafeteria staff carry heavy items up and down stairs (Interview, Juana, 02/2023)

Lastly, recursive collaborative reflections involve gathering and examining data and evidence to evaluate how the learning experience has affected student learning, and working collaboratively to modify the learning experience based on the collected reflections and data. According to Juana, one major challenge they faced was how to track each child's learning journey, which she believes is quite daunting in the beginning. Even though they may develop a deep understanding of each child's personality and abilities, when it comes to tracking their learning progress, it can be difficult because each child exhibits a unique set of behaviors and responses within the context of the program. Therefore, in the early and middle stages of the program, the teachers engaged in reflective analysis and examined personalized case studies of each child. Through this process, they gained insights into each child's unique learning journey and understood how the program design supported each child's individual needs. Ultimately, their goal was to ensure that the program was tailored to the learning needs of each child, which Juana believes is the core of Design

Thinking as well (Interview, Juana, 02/2023). Lynn also noted that she became conscious of the impact of her questioning techniques on children during philosophical discussions following the collaborative reflection session: "I think when I'm guiding, I should lead towards more openness, rather than leading them towards something I want them to answer" (Interview, Lynn, 02/2023). Recursive collaborative reflections help teachers move forward from looking back at the evidence and data, building on to each other and learning from it together. Moreover, Aria was inspired when she was involved in the collaborative reflection in Riverside School. She thought that the regularity of these collaborative inquiry sessions fosters a sense of community and mutual support among the teachers (Interview, Aria, 02/2023). By coming together on a consistent basis, they established strong professional relationships, built trust, and created a safe space for open and honest discussions. This collaborative environment encourages a culture of continuous learning, where teachers can feel comfortable seeking guidance, sharing challenges, and celebrating successes.

Limitations

This is a study that combines autobiographical inquiry, arts-based research and interviews. Some may argue that autobiographical inquiry can lead to self-indulgence without offering insights to others. To better understand and analyze my experiences, I took several measures. First, I utilized different forms to make sense of the experiences within which I am engaged, such as reviewing my journals and photos, and interviewing relevant individuals. Second, critical reflection became essential in this process. As Pinar (2014) states, When we reflect upon our educational journey, we don't just recall the past; we also revisit our perception of that past. We must carefully examine, reconsider, and reconnect with our experiences to uncover their profound insights. By engaging in this process of recollection, we not only remember but also present the very essence of truth itself. As such, the process of recollecting past experiences is meaningful in and of itself. Furthermore, the authenticity of autobiography depends not only on the writer's free association, deconstructive process, and interpretative depth of unconsciousness, but also on the precision of synthesizing the comprehensive stage and the perception of situational context during the inte-

grative stage. Creating found poetry has also provided me with a means to effectively convey and articulate the emotions and insights associated with these nuanced (re)encounters.

I also supplemented an autobiographical investigation, interviews with others participants who have known me as a student or teacher at different stages. I ensured rigor by monitoring my reflections through reflective memoing (Maxwell, 1996).

Finally, some may argue that this study's focus on myself as an Asian, cis-gendered teacher, and the fact that all participants are based in Asia, may overlook the diverse experiences of the teaching population. However, it is important to note that qualitative research does not strive for representativeness, but rather seeks to offer a detailed and contextualized explanation of phenomena. I hope that the insights gained from this study can add to the education field's broader comprehension of Design Thinking, providing resonance and guidance to other educators as they navigate their journeys.

Implications

This thesis explores the (re)encounters with Design Thinking and Design for Change in the context of education examining its interplay and correlation with Deep Learning. The findings and reflections shared by the researcher and participants provide insights into the integration of these approaches into teaching and learning practices. The implications can inform educators about the potential benefits and challenges of incorporating Design Thinking into their pedagogical approaches, thereby contributing to innovative and student-centered teaching methods that facilitate deep learning.

The autobiographical and arts-based research methods used in this study have gained insights from teachers' lived experience and could be used in future studies around Design Thinking in education. In future research, it may be worthwhile to also consider the possibility of conducting participatory research with students, teachers and school leaders. Such an approach could involve

community members or stakeholders actively participating in all stages of the research process, and would aim to build relationships, foster mutual learning, and promote shared understanding between researchers and participants. This approach would have the potential to yield meaningful and relevant research outcomes that can inform social change, particularly in the context of school settings.

In addition, my study's insights can have implications for professional development programs for teachers and administrators. The findings can guide the development of training modules or workshops that aim to enhance educators' understanding and application of Design Thinking principles in the classroom. It can also underscore the importance of ongoing professional development to support educators in integrating innovative approaches into their teaching practices. This study presented my personal experiences, including childhood memories and interactions with children in school, and how they have influenced my perception of education. To develop a comprehensive understanding of professional identity and practice, it is essential to consider identity formation over time and from various perspectives. The autobiographical and arts-based research methods used in this study served as a practical resource for stimulating critical discussion and reflection among both pre-service and in-service teachers. Policymakers in the field of education can consider the implications of this research when developing policies and guidelines for curriculum reform, teacher training, and educational innovation. The study highlights the importance of creating an enabling policy environment that supports the integration of Design Thinking principles into educational systems at various levels.

Conclusion

Essayer encore. Rater encore. Rater mieux.

(Samuel Beckett, 1983)

It has been a privilege to embark on this research journey, pausing to reflect on key encounters/ re-encounters with my educational experiences and engaging in meaningful dialogues with the study participants and their own. Their stories and insights have enriched the study and contributed to a deeper understanding of the potential of Design Thinking in education. The implications of this study extend beyond the classroom, emphasizing the importance of continuous professional development for teachers, the need for support and resources, and collaborative networks to sustain and nurture implementation of Design Thinking in education. In closing, this study has underscored the value of Design Thinking as a powerful tool for reimagining and revitalizing education, and how it can work hand in hand with initiatives like NPDL. My thesis has invited educators, policymakers, and researchers to explore and embrace Design Thinking, DFC, and NPDL as encounters, and then re-visited re-encounters, that can lead to educational innovation and meaningful change through being open to provocations coming from spaces, pluralities, intensities, and charges.

Ethics Board Approval

McGill University
Research Ethics Board Office
www.mcgill.ca/research/research/compliance/human

CERTIFICATE OF ETHICS APPROVAL

REB File Number:	22-08-086
Project Title:	(Re) Encountering Design Thinking in Education - Journeying as an observer, a volunteer, and a teacher
Student Principal Investigator:	Tianqi Zhou
Department:	Integrated Studies in Education
Supervisor Name:	Professor Teresa Strong-Wilson
Sponsor/Funding Agency (if applicable):	

Research Team (if applicable):

Name	Affiliation

Approval Period:

FROM	TO
13-Dec-2022	12-Dec-2023

The *REB-2* reviewed and approved this project by Delegated review in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Participants and the Tri-Council Policy Statement: Ethical Conduct For Research Involving Humans.

* Approval is granted only for the research and purposes described.
* Modifications to the approved research must be reviewed and approved by the REB before they can be implemented.
* A Request for Renewal form must be submitted before the above expiry date. Research cannot be conducted without a current ethics approval. Submit 2-3 weeks ahead of the expiry date.
* When a project has been completed or terminated, a Study Closure form must be submitted.
* Unanticipated issues that may increase the risk level to participants or that may have other ethical implications must be promptly reported to the REB. Serious adverse events experienced by a participant in conjunction with the research must be reported to the REB without delay.
* The REB must be promptly notified of any new information that may affect the welfare or consent of participants.
* The REB must be notified of any suspension or cancellation imposed by a funding agency or regulatory body that is related to this study.
* The REB must be notified of any findings that may have ethical implications or may affect the decision of the REB.

Appendix A: Recruitment Message

Dear _____ (Participant's name),

I am currently carrying out a thesis research project related to my Master of Arts thesis at the Faculty of Education, Department of Integrated Studies at McGill University, under the guidance of Dr. Teresa Strong-Wilson. I would like to express my appreciation to you for your potential interest in participating in this project.

This research aims to explore the impact of Design Thinking in Education on teacher practice. While the research adopts autobiographical and art-based approaches to writing and reflecting on my encounters with the program, that journey also involved others. I look forward to re-encounter the program with you through an in-depth conversation about Design Thinking in Education. The results of my study will be shared in my master's thesis. I will also share my results with the participants and my school community. If there is further interest, I will also share my results with the Design For Change cohort.

I would be asking you to participate in a one-on-one interview for approximately 2 hours. The content of the interview would address your memories of Design Thinking and its ongoing influence on you regarding teaching and learning.

I am sending you the informed consent form. Please take the time to read, sign the form and send it back to this McGill email. If you have any questions, don't hesitate to reach out to me and we will discuss what your participation would involve.

Thank you so much!

Warmly,

Tianqi

Appendix B: Informed Consent Form

Title of Research: (Re) Encountering Design Thinking in Education - Journeying, while becoming a teacher

Principal Investigator: Tianqi Zhou

Department: Integrated Studies in Education

Contact Information: Tianqi.zhou2@mail.mcgill.ca

Supervisor: Dr.Teresa Strong-Wilson, teresa.strong-wilson@mcgill.ca

Dear Participant,

I am currently carrying out a thesis research project related to my Master of Arts thesis at the Faculty of Education, Department of Integrated Studies at McGill University, under the guidance of Dr. Teresa Strong-Wilson. I would like to express my appreciation to you for your potential interest in participating in this project.

This research aims to explore the impact of Design Thinking in Education on teacher practice. While the research adopts autobiographical and art-based approaches to writing and reflecting on my encounters with the program, that journey also involved others. I look forward to re-encounter the program with you through an in-depth conversation about Design Thinking in Education. The results of my study will be shared in my master's thesis. I plan to share the information in academic publications, and I might also share my findings with DFC international cohort in workshops and articles.

I would be asking you to participate in a one-on-one interview for approximately 2 hours. The content of the interview would address your memories of Design Thinking and its ongoing influence on you regarding teaching and learning. Interviews will be recorded. Videos are not necessary, therefore, you can leave your camera off if you wish.

Your rights and interests during the project:

1) You will determine the specific date of the interview. Due to the travel restriction among countries, we would likely have the interview online. In this case, only audio will be recorded, therefore, you can leave your camera off if you wish.

2) Interviews will be recorded on Zoom, a video conferencing platform, for subsequent analysis by me. All recordings will be kept confidential, and a pseudonym will replace your real name after being transcribed. The estimated date for completing the transcription process would be 01/03/2023. Recordings and the pseudonym key will be destroyed on 01/03/2023.

3) If you feel uncomfortable during the interview, you can refuse to answer any of my questions and suspend or stop the interview and recording.

4) Your well-being and interests during the project are my primary consideration. It is entirely voluntary for you to participate and you will not receive any benefits for it. You have the right to withdraw from the project at any moment. If you decide to withdraw during or right after the study, all information obtained up until that point will be destroyed. Once data has been pseudonymized or combined for publication, it may not be possible to withdraw your data in its entirety. We can only remove it from analysis and form use in future publications. Pseudonymized data will be kept longer to inform future research studies conducted by the Principal Investigator and will be shared with other researchers with your permission.

5) After finishing the recording transcription and data analysis, I will send you a copy of my manuscript. You can check whether the transcription aligns with your feelings and experiences. You can delete or change what you say in these texts at that time.

If you have any questions, please do not hesitate to ask me or contact my supervisor Dr. Teresa Strong-Wilson at teresa.strong-wilson@mcgill.ca. We would greatly appreciate your cooperation in this endeavor to better understand the long-term impacts of our encounters with Design Thinking in Education.

Sincerely,

Tianqi Zhou

Department of Integrated Studies in Education

3700 McTavish Street, McGill University

Montreal, QC Canada H3A 1Y2

For the researcher: I have discussed with _____ (participant) the details in the informed consent form. I have asked if any questions remain and have answered their questions as best as possible.

To participant,

Please write YES or NO for the following regarding interview recordings used for this study. Please note that video recording is not needed therefore you may turn off the camera function.

_____ I agree to be video recorded during the interview.

Please write YES or NO to the following statement if you consent for your anonymized data to be used for future, unspecified uses.

_____ I consent for my anonymized data to be used for future, unspecified uses.

Participant's Name (in print): _____

Participant's Signature: _____   Date: _____

If you have any questions or concerns regarding your role as a participant in this research study, please contact the McGill Ethics Officer at 514-398-6831 or lynda.mcneil@mcgill.ca.

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