

ABSTRACT

Mihoko Chida, IMPLEMENTING CREATIVITY IN AN INTERNATIONAL SCHOOL: A CASE STUDY OF POSSIBILITIES AND CHALLENGES (Under the direction of Dr. Matthew Militello). Department of Educational Leadership, July 2023.

In an era of job automation and a globalized economy, educational institutions must redefine their goals to equip students for future success. International schools are gradually transitioning from focusing solely on academics to developing 21st century skills -- creativity, collaboration, and communication. While many international schools proclaim a commitment to fostering creative thinking, in this case study, I sought to holistically understand the practice of creativity in these settings, focusing particularly on one start-up international school. I used a small-scale questionnaire distributed among international educators to establish a contextual understanding of how creativity is defined and conducted a deeper case study an intensive case study during the planning phase of a new international school in Bangkok. I was a team member on the team planning the new school. Thus, I had a unique opportunity to explore the design and implementation of an educational model aimed at transforming learning experiences as an alternative to traditional schooling. The findings revealed that developing a new educational model necessitates the consolidation of diverse perspectives into a cohesive plan because fostering creativity can clash with existing organizational structures, putting strain on novel systems and unprepared teams. Furthermore, existing systems often serve to magnify pre-existing issues. The findings underscore the necessity for a leadership framework promoting deeper learning and fostering of creativity in students. As the need for educational reform grows, so too does the requirement for adaptive policy shifts. While current accreditation standards validate the credibility and quality of educational institutions, standardized criteria may necessitate more flexibility to accommodate innovation. To overcome these challenges,

innovative schools could engage in constructive dialogue with accreditation bodies, foster collaboration with like-minded institutions, and utilize opportunities to share best practices. Further research is needed to devise effective methods for creativity assessment and use of strategies teachers that nurture creativity within the context of an international school. Given the cultural diversity inherent in international schools, educators need to understand how creativity is perceived and valued across various cultures. Longitudinal research would enhance our knowledge about the long-term impact of creativity education on students' personal, academic, and professional trajectories.

IMPLEMENTING CREATIVITY IN AN INTERNATIONAL SCHOOL: A CASE STUDY OF
POSSIBILITIES AND CHALLENGES

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CHAPTER 1: NAMING FOCUS OF PRACTICE (FOP)

Grade 3 students at an international school in Tokyo, Japan sit with a sheet of paper with an empty abstract shape in the center with a dark black line. They have pencils in their hands and erasers at their desks. The teacher explains they have ten minutes to draw a picture using this shape. The teacher assures them there were no wrong answers and to use their creative thinking skills to develop this picture on paper. She has the class repeat this mantra. The class begins to work quietly.

After one minute, a child raises his hand, breaking the silence, “I’m done. What should I do?” he asks, feeling accomplished and proud. The teacher looks down at his work. He created a simple creature from the shape by adding eyes, a nose, and a mouth. From the shape, he drew lines that were two arms and two legs. “You have the entire time to see what your mind can create. Why don’t you try to see what else you can add?” the teacher gently prompts. He looks confused and stares at his paper quietly. He adds some strands of hair and puts his pencil down.

Within the next few minutes, other students raise their hands to indicate they are finished. Each time the teacher responds similarly. Some students go back to work and add a few more details. Others insist that they have completed the task and take out a book to read. One student adds a title.

This activity was conducted in five different classes at the same school, with students ranging from Grades Three to Five. In each class, this scenario repeated itself. Most students drew a creature of some kind. The teacher analyzing this work started to question the creative stamina and willingness to take risks with our students. Had we trained our students to consider thinking to be task-oriented? Have we limited their creative thinking by focusing on producing a product?

Achievement data collected from external assessments, such as the Measure of Academic Progress (MAP) testing and the International Schools’ Assessment (ISA), show that international schools meet most students' academic needs at or above U.S. independent school norms. However, the vignette describes how international school students have not built the creative thinking skills and resiliency necessary to generate innovative ideas. In other words, the mindset-building and learning of many international school classrooms focus on achieving academic skills. Yet, many international schools claim that they are developing creative thinking in their students. The International Baccalaureate (IB) Learner Profile, used by the over 5,000 schools that offer this program, lists creative thinking as one of the main goals.

International schools have started to address the changing global economy and complex problems requiring future generations of students to be innovative, creative, and flexible. As a result, a recent trend for schools is shifting their focus to developing 21st century skills -- collaboration, creativity, and communication. Where do the three Cs of collaboration, creativity, and communication appear in international schools? How are these skills mitigated by the traditional features and outcomes of international schools? And, can these three C's be incorporated to enhance and support and not be subsumed by the current normative practices and pressures associated with international schools?

In the dissertation research project and study, I aimed to understand these questions better. In this first chapter, I unpack the focus of practice (FOP). Specifically, I frame the elements that situate this FOP in terms of the rationale, significance, and link to equity. I then highlight the purpose statement and research questions. Next, I describe the case study design. I conclude with a discussion of confidentiality, ethical considerations, and study limitations.

Focus of Practice

This study's focus of practice (FOP) is rooted in professional need and personal passion. Matching the high academic expectations associated with international schools and the required conditions of creativity is both necessary and difficult in international school settings. Additionally, beyond professional necessity, I have a passion for infusing creativity into the demands of international school students' learning. As a result, I began the study with a clear purpose. I provide a rationale for the FOP by a root cause analysis vis-à-vis a fishbone analysis. I investigate the significance of the FOP in three important areas: practice, policy, and research. I situate the FOP in the equity arena by framing the issues of equity associated with this FOP.

International School Context

As evidenced in the introductory vignette, there is a need for a curricular focus on creativity. Particularly in Asia, culturally academic achievement is considered the main purpose of schooling. Parents of foreign nationals and local families often choose an international school because the education prepares their children to attend prestigious U.S. colleges and universities. Given the high tuition costs and competitive admissions processes, the majority of international students are typically more academically able and socio-economic advantaged with substantial parental support. In addition, international schools are market-driven and need to compete with other schools to maintain enrollment and status within their location and the international school community but need in-country expectations and national standards. Thus, innovative models that vary widely based on location, demographics, curricular program, and guiding principles are designed to attract students. Each factor contributes to complexities that require schools to address the needs of their students in a different manner than schools in the United States. To address creativity, international schools need to critically examine their instructional programs, school culture, and teacher mindsets to determine if all students are adequately challenged and whether higher-level skills are fostered in their students.

The latest ISC Research data reveal that over 11,000 international K-12 schools worldwide enroll more than 7.5 million students (ISC Research, 2021a). They estimate a global workforce of 600,000 teaching staff, generating roughly \$61 billion U.S. dollars in direct tuition revenues. International students are increasing annually, most prominently in the United Arab Emirates and China. While international schools were traditionally for foreign expatriates looking for an education and experience for their children similar to their home countries, recent

trends show that more local families are choosing international schools to prepare their children for a global future.

International schools are educational institutions that provide a globally-oriented education to students from diverse cultural and linguistic backgrounds. There is no definitive count of international schools worldwide, but according to ISC Research, a company that provides market intelligence on the international school market, there were over 11,000 international schools globally in 2020. This includes schools that offer an international or national curriculum with an international focus. International schools cater to the needs of expatriate families, global nomads, and local families seeking an international education. They provide a globally recognized curriculum, including the International Baccalaureate (IB) and Cambridge International Examinations (CIE). International schools are generally considered to provide high-quality education that prepares students for a globalized world. They often have experienced and well-qualified teachers, robust facilities, and offer a range of extracurricular activities. However, the reputation and caliber of individual schools can vary. In order to foster credibility and establish confidence, international schools seek accreditation by undergoing a voluntary quality assurance review that evaluates the school's curriculum, facilities, teaching staff, and governance. Table 1 lists agencies that provide accreditation to international schools. Each agency has a set of standards and criteria for accreditation, but they all aim to ensure that international schools provide a high-quality education that meets international standards.

Several types of international schools are independent international schools that are privately-owned and often have high tuition fees. They cater to expatriate families and may follow an international curriculum or the host country's curriculum. Governments or international organizations such as the United Nations often manage diplomatic/international

Table 1

Comparison of Accreditation Agencies

<u>Accreditation Agency</u>	<u>Number of International Schools</u>
International Baccalaureate Organization (IBO)	6,592
Council Of International Schools (CIS)	849
European Council of International Schools (ECIS)	516
Council of British International Schools (COBIS)	291
Western Association of Schools and Colleges (WASC)	222
New England Association of Schools and Colleges (NEASC)	54
Middle States Association of Schools And Colleges (MSA)	8

Note. As of September 2021.

agency schools. They educate the children of diplomats and international employees and often follow the home country's curriculum. Local private international schools cater to local families seeking an international education for their children. They may follow an international curriculum or a hybrid of national and international curricula. Bilingual/multilingual schools provide instruction in multiple languages and often cater to students from different linguistic backgrounds. They may follow an international curriculum or the host country's curriculum, but with a focus on language learning.

International schools have become increasingly popular among parents who seek an English-based K-12 education for their children to prepare them for post-secondary education in Western countries. This trend is evidenced by the growing number of international schools worldwide, with a reported 11,000 international schools operating in 2021 (ISC Research, 2021a). One reason for this trend is the perception that an English-based education will facilitate a smoother transition to Western-style post-secondary institutions, particularly in the United States and Europe (Merryfield, 2013).

With the growing competition among English-based international schools, schools employ various strategies to attract parents seeking an alternative to local schools. As a result, many international schools focus on offering the International Baccalaureate (IB) curriculum, which is widely recognized by universities in the United States and Europe, or seek accreditation from American-based agencies, such as the Middle States Association of Colleges and Schools, to ensure their programs meet Western educational standards (Knight, 2004). In addition, some international schools differentiate themselves by focusing on innovation and creativity, which has become increasingly important in preparing students for the global workforce (Mantzicopoulos, 2018). For example, the Canadian International School in Singapore has

implemented an Innovation Lab, which fosters creativity and entrepreneurship among its students (Kong, 2019). The British School of Beijing has emphasized the importance of creativity in its curriculum by offering classes in drama, music, and art (Kong, 2019). By emphasizing innovation and creativity, international schools aim to differentiate themselves and attract students and parents seeking a unique educational experience that offers opportunities to Western universities and meets the increasing demand for creative thinking skills.

Why Study Creativity?

The rationale for the study of creativity in international schools is threefold. First, international schools have traditionally been achievement-focused, rather than meeting affective goals, including creativity. The intense focus on cognitive learning fosters a sense of compliance that stifles individual passion, voice, and power. Second, the future employment profile is changing, and the desired qualities of companies have shifted from field-specific knowledge and skills to universal traits, often referred to as 21st century skills. Finally, the current world faces many complex global problems that must be addressed with innovation and creativity.

International schools overemphasize the academic achievement due to several reasons:

1. Parent pressure for students to enter competitive and high-ranking universities around the world.
2. A “crowded” curriculum with subject-specific standards, including an additional language.
3. The reliance on standardized tests to measure student achievement and the effectiveness of the school program.
4. Teachers developing curriculum in isolation to cover content standards.

5. Cultural differences regarding the purpose of education and the desired values of children.

These factors play a significant role in creating schools in which student academic achievement is the main, or only, goal. In contrast, the future demands schools to prepare students with different skills for future success. A growing body of evidence confirms that future global citizens need “soft skills,” such as creative thinking, resilience, empathy, and collaboration. These skills are distinct from traditional subject content and technical skills (Gardner, 1999; Goleman, 2000; Heckman & Kautz, 2012; Pink, 2005; Robinson, 2011; Zhao, 2009). Kyllonen and Payne (2012) specify these skills as cognitive skills (adaptability, creativity, critical thinking, and problem-solving), interpersonal non-cognitive skills (communication, cultural sensitivity, leadership, and teamwork) and intrapersonal non-cognitive skills (persistence, self-efficacy, time management and work ethic). As a result, schools are including a focus on the affective domain to prepare students for their futures, and as a result of COVID-19 global pandemic, schools and students intensified the need for addressing well-being and other affective elements.

Creativity is often defined as something novel, useful, and appropriate. Generating new ideas or iterations is not enough; the creative process includes the ability to merge new ideas with preexisting ideas. Fuentes (2017) summarizes the essence of creativity as the ability to examine and understand the existing world to imagine possibilities, stating “Creativity is seeing the possibilities and then trying to make those imaginings into material reality” (p. 4).

In addition, the automatization of jobs and globalization of the economy requires schools to rethink the objective of education for future achievement. The future employment landscape looks different from the past and the current climate. The 2016 World Economic Forum report, “The Future of Jobs,” supports this claim by identifying the disruptive changes and

transformations currently affecting global industries, which “have a significant impact on jobs, ranging from significant job creation to job displacement, and from heightened labour productivity to widening skills gaps. In many industries and countries, the most in-demand occupations or specialties did not exist 10 or even five years ago, and the pace of change is set to accelerate” (World Economic Forum, 2016, p. 3). The report estimates that 65% of children entering elementary school today will ultimately work in jobs that are completely different to those that exist today.

In previous generations, local problems required small-scale solutions that could then be replicated in different contexts. The William and Flora Hewlett Foundation’s (2010) Strategic Plan for Educational Reform, which focused on education reform in California, explained how the globalization of the economy has made the landscape more interconnected, complex, and dynamic. The authors describe the “pressing societal issues, from growing income disparities to climate change,” that “threaten the health and prosperity of future generations” (p. 79). Issues cannot be contained in one context and require innovation and creative thinking to explore solutions that transcend sectors and national borders.

As the world’s problems become more complex, international schools worldwide have shifted their emphasis away from academic achievement. They address the need to prepare future generations with the tools and desire to find solutions to global dilemmas. Accrediting agencies and programs, such as the Council of International Schools (CIS) and the International Baccalaureate Diploma Programme (IBDP), have incorporated this progressive view into their standards and expectations. The 849 schools awarded accreditation through CIS must show a commitment to developing students’ global citizenship in their guiding statements, their work with students, and their use of resources. According to their website, the International

Baccalaureate's aim "to develop students who will build a better world through intercultural understanding and respect" is reflected in the IB Leader Profile, which incorporates this into ten different traits, describing "a broad range of human capacities and responsibility that go beyond academic success" (International Baccalaureate Organization, 2023).

Within the United States, the Hewlett Foundation's Strategic plan attempts to address the need for increased capacities through a proposed shift in education. In the plan, the authors outline three major goals and has adopted the term "deeper learning" as one of its areas of interest. One of the five "deeper learning" components is thinking critically to solve complex problems. This includes creativity in analyzing and solving problems. They define the need to think critically and solve complex problems for students to "know how and when to apply core knowledge by employing statistical reasoning and scientific inquiry to formulate accurate hypotheses, offer coherent explanations, and make well-reasoned arguments, along with other skills" (The William and Flora Hewlett Foundation, 2010, p. 6).

In his work as a senior research associate with Project Zero at the Harvard Graduate School of Education, Ron Ritchhart has traveled the world with his work about cultures of thinking. During his work, he conducts an activity with groups of teachers and parents in multiple school contexts, asking them to answer the question: "What do you want the children you teach to be like as adults?" He describes the results in *Creating Cultures of Thinking*:

The same sets of qualities tend to appear over and over again. There is often an emphasis on attributes that drive learning: curiosity, inquisitiveness, questioning. And those that facilitate innovation: creativity, problem solving, risk taking, imagination and inquisitiveness. There are the skills needed to work and get along with others: collaboration, empathy, good listening, helpfulness. And those that support the ability to

deal with complexity: analysis, making connections, critical thinking. And usually there are those that situate us collectively in the world: as a global citizen, member of a community, someone aware of his or her impact on the environment, able to communicate. (Ritchhart, 2015, p. 17)

Rothstein (2018) argued that the world needs more poets and philosophers than computer scientists and engineers. He suggests that while technical skills are important, a narrow focus on them is insufficient for creating a just and equitable society. Rothstein contends that a well-rounded education, which emphasizes creativity, critical thinking, and empathy, is necessary for developing citizens and leaders who can address society's complex challenges. He believes that an education in the humanities and social sciences is essential for fostering the creative and innovative thinking that is necessary for solving the world's most pressing problems.

Specifically, my work focuses on the efforts at one specific international school in Bangkok, Thailand. For confidentiality purposes, I use the pseudonym *NOVUS International School* for the school's name in the case study to protect the privacy and anonymity of the participants involved in the research. NOVUS International School was the context of the case study in which I examined the path and barriers of opening a new international school in which fostering creativity is one of the main intentions. I was a founding school leader and on the planning team at Novus.

In summary, the rationale for studying creativity in international schools is to shift from the strictly academic and cognitive focus found in many international schools to better prepare students to solve global problems and find success in the future workplace. International schools face a distinctive challenge to bridge the gap between meeting the initial academic intentions of international schools and fostering creativity and other soft skills in their students. I refer to the

tension between the established norms and innovation in the competitive international school market as the “Innovation-Tradition Paradox” and multiple examples of this appear in the study. Next, I explain the root cause analysis of the FOP using a fishbone diagram, which further exemplifies the origins of the “Innovation-Tradition Paradox.”

Unpacking the Focus of Practice

The purpose of the fishbone is to carefully examine the assets and challenges before drawing conclusions about the issue at hand. Bryk et al. (2015) offer a fishbone to unpack and dissect a specific problem or issue. While the fishbone provides an analytical way to understand the root causes of an issue, the authors warn against a rush to judgment or “solutionitis.” The authors describe “solutionitis” as “the propensity to jump quickly on a solution before fully understanding the exact problem to be solved” (Bryk et al., 2015, p. 24). By using the fishbone diagram, the complexity of the cause can be examined and “while one might contest any given reason shown in the fishbone diagram, one fact clearly stands out: no single person, process, or resource is to blame” (Bryk et al., 2015, p. 68).

This fishbone deviates from the Bryk model in two important ways. First, the model in the ECU EdD program includes three levels of analysis: micro, meso, and macro. For the purposes of this analysis, the micro-level is the individual classrooms, the meso is the school context, and the macro-level is the country and international school context. Second, the fishbone names challenges and assets. In the context of the fishbone analysis, challenge or need refers to the issues that may be contributing to the problem. Assets, on the other hand, refer to the strengths that could be leveraged to help address the FOP. By including both challenges and assets in the analysis, I consider both the negative and positive factors that may be contributing

to the problem or effect and develop a more comprehensive understanding of the situation. This can help in developing more effective strategies for addressing the issue.

To better understand better the complexity of the international school context in fostering creativity, I analyzed the assets and challenges in the three contexts (see Figure 1). First, at the macro-level of the fishbone diagram, I highlight the valuable assets that can help address the need for creativity in students in the international school landscape. For one, currently many international schools have a mission and vision that prioritizes creativity, innovation, and curiosity. Additionally, national standards and accreditation agencies, such as the Common Core State Standards and the International Baccalaureate Organization, have revised their documents for a stronger focus on creativity. Some large international schools have committed to teaching 21st century skills, while some colleges and universities have altered their admissions requirements to emphasize creativity. Lastly, the economically stable and educated family backgrounds of many international school students and a younger parent community focused on global changes place a greater value on developing "soft skills" such as creativity.

Despite the many assets of the international school community in addressing creativity, several challenges exist. Firstly, the students' language needs are a significant challenge that needs to be viewed as an asset. While most international schools are English-based, many students use another language at home. Second, cultural differences about the purpose of schooling and the role of creativity may hinder progress. Parents may enter their children in international schools instead of local schools for easier entry into the American or British university system as a means for security for their child. Third, fear of being different from other international schools and the impact on enrollment can impede creative efforts. Fourth, the COVID-19 pandemic and school closures negatively affected students' academic and social

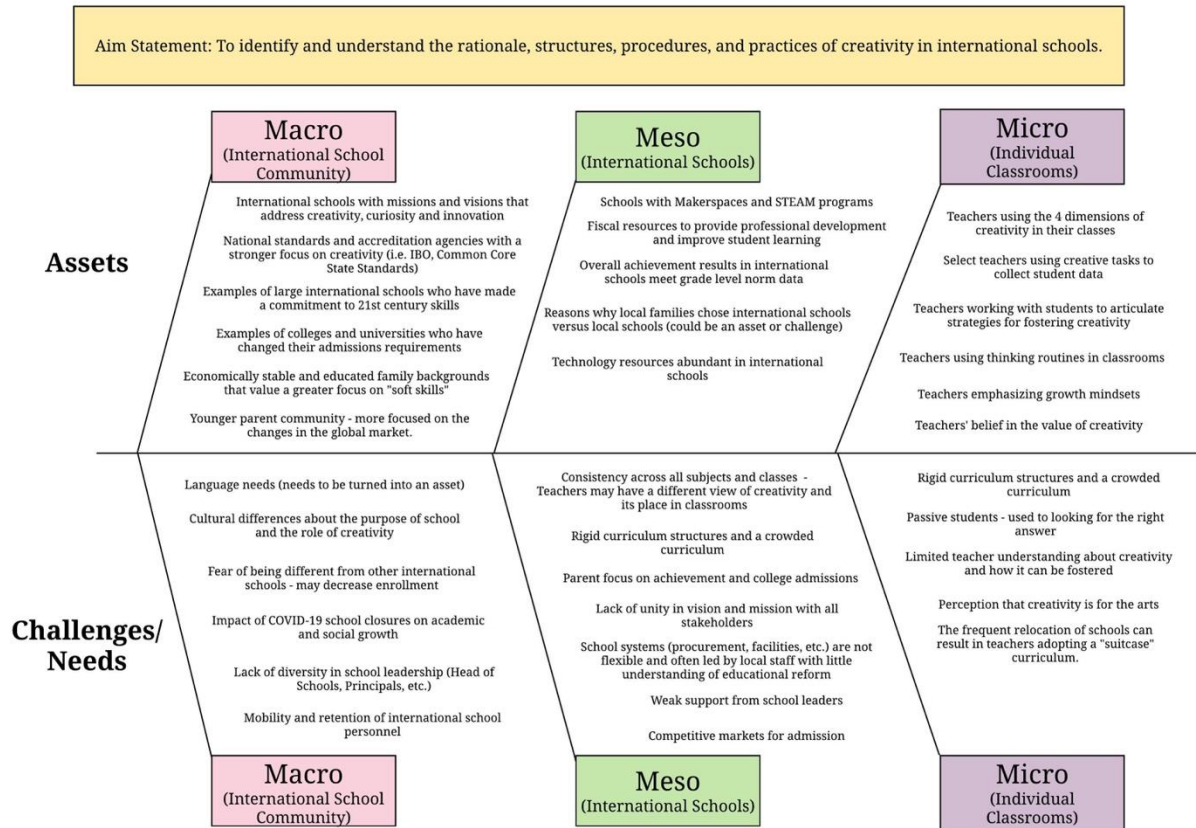


Figure 1. Fishbone diagram.

growth. Finally, a lack of diversity in school leadership, including Heads of Schools and Principals, and high mobility and attrition rates of international school personnel often hinder the continuity and implementation of creative initiatives.

At the meso level, international schools vary greatly depending on the context and population they serve. Many international schools have several assets that can help address creativity in their students. For one, an increase in schools with Makerspaces and STEAM programs encourages hands-on learning and creativity. Another asset is in the fiscal resources available to private international schools to provide professional development for their faculty and improve student learning. Third, overall achievement results in international schools typically meet grade-level norm data, indicating that they are successfully educating their students. This assures reluctant parents who doubt the value of creativity for their child's academic success. Fourth, local families choose international schools over local schools to provide an alternative to the traditional education. However, families solely focused on developing English as a means for future opportunities and university entrance may turn this asset into a challenge. Finally, technology resources are often abundant in international schools, providing students access to the latest tools and resources for creative expression.

Many international schools face meso-level challenges in addressing creativity in their students. Because of the lack of consistency across all subjects and classes, teachers have different views on creativity and how to incorporate creativity into the curriculum. Second, rigid curriculum structures and a crowded curriculum limit opportunities for creative expression. Third, parents may be more focused on achievement and college admissions rather than the development of creativity. Fourth, a lack of unity in vision and mission among all stakeholders can impede progress toward fostering creativity. Additionally, the school systems themselves,

including procurement and facilities, may not be flexible and may be led by local staff with little understanding of educational reform. Furthermore, weak support from school leaders and competitive markets for admission can also pose challenges to efforts to foster creativity in international schools.

The micro-level assets and challenges include individual classrooms and teachers. However, classroom instruction varies depending on the teacher, the school context, and the students' needs. International educators have several assets that can help them address creativity in their students. The use of the four dimensions of creativity -- fluency, flexibility, originality, and elaboration -- to encourage creative thinking in classrooms has increased. Select teachers at a school may use creative tasks to collect student progress data. Additionally, teachers may work with their students to articulate strategies for fostering creativity and creating a shared sense of purpose and direction. Using thinking routines in classrooms, such as brainstorming and mind-mapping, may also help students develop their creativity. Lastly, international educators often emphasize growth mindsets and strongly believe in the value of creativity as an essential component of their students' educations.

International educators face several challenges in addressing creativity in their students. Rigid curriculum structures and a crowded curriculum can limit opportunities for developing creativity in students and their creative expression as teachers may feel constrained by the need to stick to a set curriculum. Similarly, students may be passive and used to looking for the right answer rather than exploring and experimenting creatively. Teachers may also have a limited understanding of creativity and how it can be fostered in the classroom. The perception that creativity is mainly linked solely to the arts, rather than being a crucial component of all subjects and disciplines, may vary depending on the faculty. When schools have a high turnover rate,

teachers may find themselves in a situation where they must frequently pack up and move to new locations. This can result in teachers adopting a "suitcase" curriculum, which refers to international school teachers bringing in their curriculum without considering the context of their new school or host country (Lund, 2011). This approach can lead to a lack of creativity and innovation in the classroom, as teachers may not have the time or resources to develop new and innovative teaching approaches.

Significance of the Focus of Practice

While the rationale provided emerging evidence and trends to support this FOP, in this section, I provide the significance of the focus of practice to three domains: practice, policy, and research. Understanding the FOP at each level is crucial as the research may inform micro, meso, and macro-level changes by identifying potential barriers or challenges to implementing reform required for bolstering creativity in international school students.

Significance to Practice

Examining how other international teachers address creativity in their classrooms provides a successful model for other teachers and school leaders in international schools. Examining successful examples of creativity implementation can offer valuable insights into how international schools manage the challenges of their unique contexts to foster creativity in their students. Rotherham and Willingham (2010) describe this shift to address less traditional skills as “the 21st century skills movement” (p. 17). Other key proponents include Fadel, Gardner, Goleman, Heckman, Pink, Robinson and Zhao. Although each of these authors come from diverse academic disciplines and offer a nuanced perspective, they are united in the belief that “(1) educational practitioners should devote more time and energy to facilitating the development of 21st century skills; and (2) such skills are not in fact recognised by traditional

educational assessments, which are based on the memorisation and regurgitation of standardized material” (Wright & Lee, 2014, p. 201). Since this work was for a universal context, a closer and specific examination of international schools was valuable.

International school classrooms are complex, each with a range in diversity of culture and language needs. Adding to this dynamic are the unique qualities that Third Culture Kids or Cross Culture Kids possess. Useem and Cottrell (1996) coined the original term Third Culture Kid (TCK) to refer to children raised in a country with a culture different from their home culture. Elements from a TCK’s home and host culture were combined to form a unique third culture. While updated definitions have been proposed to include the experience of biracial children and those raised cross-culturally, the international community continues to favor the term TCKs. Due to their complex background and cultural experience, many TCKs struggle to form their own cultural identity and manage conflicting expectations between home, school, and host country. The purpose of this study is not to propose a single solution to be replicated in other schools, but rather to examine one school context closely to identify challenges and promising practices.

Significance to Policy

On a school level, policies can be supportive or act as roadblocks to teachers’ work with students. In a successful school context, the school’s policies provide structural support to the classroom. One significant school policy controls a valuable resource, time. Timetables determine how time is structured and balance the school’s needs and priorities by allotting time and distributing personnel. This impacts the time for teachers to collaborate in grade-level teams or teams across grade levels. This time could be used to plan learning experiences, develop assessments and analyze student work. It also determines who teaches the subjects needed and how much time is allocated to each subject. As a startup school with a small student body and

impressive facilities, NOVUS International School was in a position to create a timetable specifically dedicated to upholding the mission and vision of the school.

Depending on the school, external testing plays a significant role in what happens in the classroom. Each school must balance the need for benchmark assessments to calibrate its programs with external expectations. Two widely used assessments are the Measure of Academic Progress (MAP) testing and the International Schools' Assessment (ISA). This is often a recommendation from accreditation agencies to ensure vertical and horizontal alignment of curricular expectations. Without an assessment plan and an undefined curriculum, a case study with NOVUS International School as a focal point provides insight into the challenges of meeting external expectations while attending to creativity. This is significant for the evolution of accreditation agencies and other organizations to meet the demands of schools attempting to address creativity in their program.

Through my close examination of NOVUS International School, I focused on analyzing the critical systems and processes that support student learning. As a newly established school, we developed policies and procedures as needed, often requiring the education team to adapt or prioritize which systems were most important. In this analysis, I identified the most effective strategies NOVUS used to develop and implement systems that support creativity and innovation in their students, despite the challenges of being a new and rapidly evolving school. I hope that other established schools can critically analyze the supporting systems in their schools to determine whether it supports the development of student creativity.

Significance to Research

The topic of creativity in international schools is important to the research world. Mintrop (2016) states “problems of practice are local, but they are often embedded in larger structures of

the education system of a given state or country” (p. 27). The topic of creativity skills is important to the field of education for a few reasons. First, it has been described as an important skill by many educational experts who attempt to redefine learning in schools. Ritchhart (2015) explains this need to reexamine learning:

Creating a new story requires us not only to rethink the purpose and vision of education but also to examine the way schools operate and function as delivery agents of that vision. To change the story and achieve different outcomes, such as those set forth previously, we must send new messages about what learning is and how it happens (Ritchhart, 2015, p. 29).

In the revised Bloom’s taxonomy of skills, creativity has been moved to the top of the learning pyramid. The Hewlett Foundation’s Strategic plan (2010) outlines thinking critically and solving complex problems:

Students will know how and when to apply core knowledge by employing statistical reasoning and scientific inquiry to formulate accurate hypotheses, offer coherent explanations, and make well-reasoned arguments, along with other skills. It also includes creativity in analyzing and solving problems” (“The William and Flora Hewlett Foundation,” 2010, p. 6).

As researchers make the claim that creative thinking skills are essential for students and call for school reform, more research is needed concerning whether addressing creativity enhances student academic achievement. Both academic goals and creativity gains need to be achieved for an international school to maintain or increase student enrollment. In addition, this study will provide insights into how a school plans for and integrates creativity into its core mission, curriculum and pedagogy.

Second, an emphasis on creativity is important to many other international schools. Because many students perform above grade levels in academics, come from educated backgrounds, and have access to opportunities outside the school context, the schools are looking for ways to challenge the students and prepare them as global citizens. However, international schools vary significantly from national schools as they serve different purposes. Some large international schools, such as the International School of Kuala Lumpur (ISKL), have identified creativity as one of their core learning principles. Influential schools, like ISKL, have a proactive approach to addressing creativity in their learning and assessment programs. Once larger schools begin this shift in focus, more schools will follow. As a result, research on how international schools address creative thinking skills in their context will be important, as there currently is little research focused on international schools addressing creativity. The case study provides findings that may support other international schools as they adopt this change in focus.

Purpose Statement and Research Questions

Through this case study, I aimed to gain a comprehensive understanding of the practices of creativity in international schools by closely examining one specific school. To achieve this, I began the study by developing an understanding how other international schools and educators define and address creativity, providing context for the research. I then focused on conducting an in-depth analysis of a particular international school founded on a philosophy of creativity, to better understand how creativity can be successfully developed and implemented in a new international school context.

The working definition of creativity is *something novel, useful and appropriate, including the ability to merge new ideas with preexisting ideas*. The definition includes cognitive skills such as creative problem solving and the creative thinking process. I explored the

additional affective skills that directly contribute to creativity and innovative thinking. Kyllonen and Payne (2012) categorize relevant 21st century skills as cognitive skills (adaptability, creativity, critical thinking, and problem solving), interpersonal non-cognitive skills (communication, cultural sensitivity, leadership, and teamwork) and intrapersonal non-cognitive skills (persistence, self-efficacy, time management, and work ethic).

Addressing the tensions among complex purposes and agendas -- the mission of international schools, what parents want for their children, and what we believe colleges and universities expect from their applicants -- is a part of the study. The entities have historically emphasized academic achievement and standardized testing while often overlooking the importance of creativity and innovation in student development. The narrow focus can leave students ill-equipped to tackle the complex challenges of the modern world; thus, international schools should prioritize fostering creativity in their students, as creativity is a key 21st century skill and essential to success in many fields. By doing so, international schools equip students with the tools and competencies they need to thrive in an ever-changing world while addressing the needs of parents and preparing students for the demands of higher education. I developed a set of questions worthy of asking and researching for other internationals and educators to take note. The overarching research question is: How does a start-up school, with creativity in its mission, develop and prepare for creativity with leaders and teachers? The sub-questions were:

1. How does an international school conceive and design a creativity-focused school?
2. What factors promote or inhibit the integration of creativity in leadership, policies, curriculum design, and pedagogy in international elementary schools?
3. How do the design elements and efforts to address creativity at NOVUS International School compare with those of other international schools?

4. How does my involvement in this research transform my leadership practices?

The guiding question for the study was to understand how we, as leadership team members of a new start-up school, focus on creativity and develop and prepare teachers for the focus. In the first sub-question, I aimed to identify the creative work found in other international schools and how those examples influence our plan. I explored how we defined and designed a creativity-focused school and how varying opinions on the definition of creativity can form a common understanding to foster creativity. In the second sub-question, I examined the complex ecosystem of international schools and the factors that foster or inhibit the integration of creativity in international elementary schools, focusing on the challenges faced and solutions developed by a team committed to addressing creativity and designing the foundations for a new school. Then I addressed the work at NOVUS International School and compared it to other international schools with the same intention. I examined the design elements and efforts to address creativity at NOVUS International School and how they align with those of other international schools. Finally, I focused on how engagement in this work transformed leadership practices, focusing on the development and evolution of my leadership skills and principles.

Through a deeper understanding of the international school landscape and the journey of one international school, I offer ideas to other schools about how to approach integrating creativity and pursuing innovation. Rather than find and propose a common solution, the case study aims to provide questions that must be considered when embarking on this work. Bryk et al. (2015) recommend that school reformers avoid looking for an immediate solution but “seek to identify a small but powerful set of drivers to initiate improvements” (p. 73). In this section, I described the overall intention of the study. Next, I provide a roadmap for the research and include a brief overview of the methodology used to collect and analyze data.

Aim Statement

The aim of this study was to conduct a small-scale questionnaire and a deep case study of an international school making intentional efforts to design learning environments that increase creativity in their students. To develop a comprehensive understanding of the current work that addresses creativity in international schools, I gathered evidence from schools and educators. I conducted a deeper case study at NOVUS International School in Bangkok, Thailand, where I joined the team in August 2019, and the school opened with students in August 2020. The phase of planning and developing the school provided a unique context for a case study of a startup school designed to transform the learning experience and offer an alternative to a traditional school context. The team at NOVUS placed a strong focus on fostering student creativity in the design of the school. While the study includes narratives drawn from the study of individual experiences, the scope of the study is to examine promising practices in a larger school context. The study focuses on how educators navigated the complex cultural tapestry of their context and attempted to develop a school model that addresses creativity with students.

Project Design

I conducted the study in two phases; I used a case study approach for phase two. I designed the study to address the findings' credibility, transferability, dependability, and confirmability. In Phase one of the study (December 2019 to March 2020). I sent an anonymous questionnaire to a wide range of international school educators across the globe, which served to gather initial information about innovative and intentional approaches to teaching creativity in international schools. I then conducted semi-structured phone interviews to collect further information about the educators' work with students in the creative domain, including interviews with the founding members of the NOVUS Learning Design Team. Using the surveys, I

collected detailed information about strategies, experiences, and challenges in fostering creativity in their schools. In phase two (November 2019 to June 2020), I analyzed how one school planned and marketed a start-up school focused on creativity. Then, I explored the challenges that arose after the school opened with students, taking an active approach to gathering data. Finally, I followed with new Learning Design Team members to collect their thoughts and opinions about the initial year. In Chapter 3, I present a detailed description of the study activities and data collection and analysis design.

Confidentiality, Ethical Considerations, and Study Limitations

To ensure data security and participants' confidentiality, I took several steps. To protect the anonymity of schools and participants in data collection, pseudonyms, and codes were utilized. All transcripts, field notes, and documents were securely stored and password protected. I refrained from discussing specific details with other educators without obtaining prior permission from the source. Finally, to ensure the protection of participants' privacy, the documents gathered from the study were not replicated or disseminated. I submitted a formal application for approval to the ECU Internal Review Board (IRB) to ensure ethical research practices. The IRB approval letter and CITI certification are in Appendices A and B. The founding Head of School of NOVUS International School completed a consent letter (see Appendix C). A consent letter of participation was signed and kept on file for each study participant (see Appendix D).

The ethical considerations of the study are, first and foremost, to protect the reputation of each participant and school within the international community. Mobility in the international school community is high, with teachers and leaders moving between locations an average of every five years. The movement leads to a small international community in which word of

mouth and reputation can impact future opportunities significantly. Another factor to consider is my dual role as a researcher and practitioner as a member of the NOVUS Design Team. I have used pseudonyms to protect individuals' identities to gather a realistic and accurate account of the planning and implementation of innovation in a particular school or organization. This allows for open and honest communication without fear of retribution or negative consequences. By using pseudonyms, participants may be more likely to provide authentic and detailed information, which can lead to a deeper understanding of the challenges and successes of the innovation process.

Lincoln and Guba (1985) state that the trustworthiness of research is built by establishing credibility, transferability, dependability, and confirmability. The credibility (internal validity), transferability (external validity), dependability (reliability), confirmability (objectivity), and construct validity were addressed in the following manner. The study's credibility and construct validity were strengthened by the multiple sources of data collected and through coding cycles. Key participants were asked to review their interview notes and coding of the marketing data. The transferability of the case studies' findings is be limited to the site studied. Case studies are "generalizable to theoretical propositions and not to populations or universes... and the investigator's goal is to expand and generalize theories" (Yin, 1994, p. 10). This methodology would need to be replicated in other similar international schools to generalize from these case studies. Some of my findings can be generalized to similar contexts, as my findings were based on other theories. A reflective coding process included open coding and recoding of data for emerging themes to increase the dependability of my findings.

Conclusion

In this chapter, I named and framed the focus of practice. Specifically, I provided the FoP rationale and significance, the purpose of the study, and the research questions I addressed. In the next chapter, I focus on the research on the topic and how the theoretical, normative, and empirical literature connects to the FOP. In Chapter 3, I explain in further detail the methodology of the work and research. In Chapter 4, I summarize the questionnaire and explores the findings, providing context about creativity in international schools. In Chapters 5 and 6, I focus on NOVUS International School, first by describing the context of the school and presenting the findings. In Chapter 7, I summarize the findings and discuss about the greater impact of the project and study and discuss my leadership growth and development.

CHAPTER 2: LITERATURE REVIEW

I wanted to start a revolution, using art to build the sort of society I myself envisioned.
Yayoi Kusama

At 90 years old, Yayoi Kusama is one of the most iconic female artists. Her oversized paintings, infinity mirror installations, and sculptures with polka dots and pumpkins continue to draw crowds of people to her work worldwide. An example of one of her installations can be seen in Figure 2. An Instagram search yields close to a million posts about her and her artwork, evidencing her wide, cross-generational impact on the art world. Her home country of Japan considers her a national treasure.

As with many of those who step out of the expected path, Kusama's path to this success was not without personal strife. Growing up in a village in Japan during World War II, Kusama grew up in an unhappy and abusive home. During this time in rural Japan, women were expected to marry and have children, not have career ambitions. Her mother destroyed any artwork that Kusama created and involved her young daughter in the tension caused by her father's infidelities. Determined to be an artist, she left her family home to study painting in Kyoto where she encountered a book with paintings by Georgia O'Keeffe. Without a support system and no understanding of the art world, she wrote O'Keeffe for advice, hoping that a stranger would be able to provide insight. O'Keeffe warned her of the challenging art world in the US but suggested that she move to the US and expose other artists to her work. Kusama did not speak English and had no resources but managed to land in New York to begin her career as an avant-garde artist. She was not recognized in the male-dominated art scene at the time, and her controversial pieces brought criticism and deepened the divide between Kusama and her family. Throughout her life, Kusama suffered from delusional visions and prolonged bouts of depression and has



Note. (Waki et al., 2019).

Figure 2. Pumpkin by Yayoi Kusama, located in Naoshima Island, Japan.

attempted to end her life several times. To this day, Kusama has been open and honest about her mental illness and has voluntarily lived in a mental health facility in Japan since 1977.

Kusama's path as an artist is relevant to studying creativity in international schools for a few reasons. First, it is an example of how cultural constructs play a role in developing creativity. In our international schools, cultural expectations and tensions influence the students, parents, and teachers. The second important feature in Kusama's story is the inherent challenge of being innovative and different. The key to educating for the future is building the personal characteristics required to be creative. The personal characteristics include courage, resilience, adaptability, and empathy. Kusama's story parallels many others who are now considered the greatest innovators of their time, each with common examples of overcoming obstacles to find success in their domain and impact others. Lastly, Kusama recognized early on that her environment and context would play a crucial role in the development of her art. Her connection to O'Keefe offered the support and encouragement she needed to venture into a wider world of the art world. Are schools an environment where students can be creative and expressive with their different ideas? Does the landscape of international schools allow for schools to be innovative and challenge the current school model?

While the importance of creativity in determining individual and social outcomes is more widely accepted than in Kusama's time, Kusama's struggles in her journey to find a safe space for her identity and creative work intersect with my focus on practice on many levels. There is a social imperative for international schools to cater to the diverse needs of their student population. There are students in international schools who struggle to find their voice and sense of belonging. Secondly, creativity does not just appear out of nowhere. Kusama's story exemplifies hard work, determination, and connections with others. The research on creativity

and creative thinking skills is evidence of the many factors that must intersect for a creative work to form. Lastly, international schools that are attempting to be innovative and change can risk their reputations and viability in their context. This literature review touches on themes from Kusama's story on different levels.

The desire of integrating creativity and innovation into the education system has increased in recent times. In 2014, the White House hosted a Maker Faire where President Barack Obama called for "people across the country to join us in sparking creativity and encouraging invention in their communities". The global economy has rewarded those in the business world who offered innovative ideas to a changing marketplace. Researchers have stated that creativity has shown to have a positive effect on work, health and well-being (Greaves & Farbus, 2006).

In my research, there was plenty of work done regarding creativity in the business world, as innovation in the global market has become a key to economic success. Articles by Forbes magazine and the McKinsey Global Institute emphasize the need for creativity in the future workplace. In addition, research in creativity in schools generally has been a popular topic, as evidenced by Sir Ken Robinson's 2006 TED Talk titled "Do Schools Kill Creativity?" with over 58 million views and availability in over 57 languages. My research has shown little work on the specific context of international schools and the intentional decisions schools, leaders, and teachers make to increase student creativity.

This chapter provides a structured literature review, which is categorized into two primary sections, as indicated in Figure 3. The initial section examines the concept of creativity, encompassing diverse definitions, prior studies, and the necessary conditions to develop creative thinking abilities. The subsequent section centers on the application of creativity within

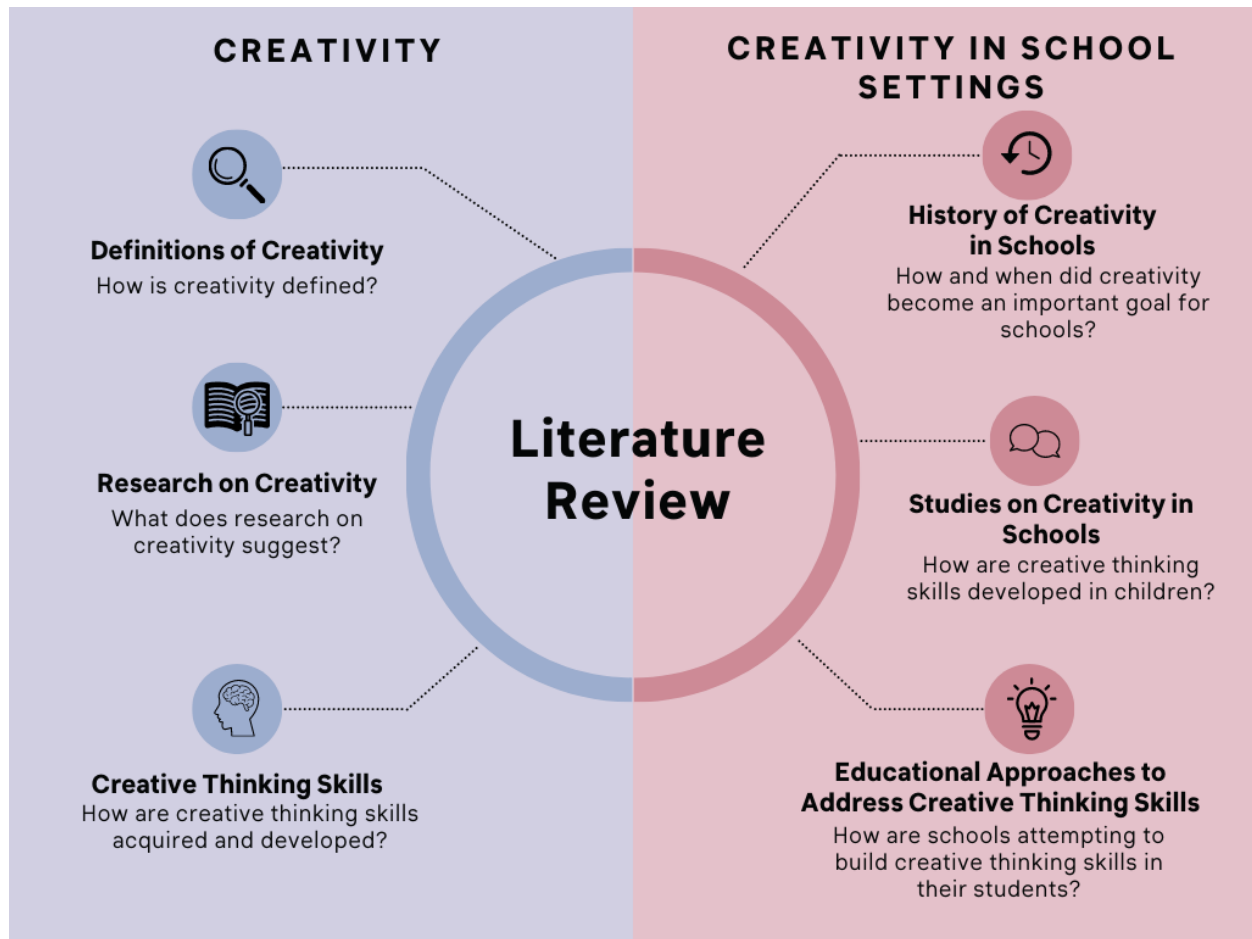


Figure 3. Overview of literature review.

educational settings. The review commences with an overview of the historical context, followed by a delineation of research on children's creative thinking skills development. Lastly, the educational approaches implemented by international schools to foster creative thinking abilities are described.

Creativity

The initial segment of this chapter concentrates on the broad subject of creativity. First, I present a comprehensive evaluation of various definitions of creativity. Subsequently, I provide an overview of previous research on creativity in diverse contexts. Finally, I examine the acquisition and development of creative thinking skills.

Creativity has become the new buzzword in not only education but in the business world. As the focus on creativity increases, words such as “innovation,” “groundbreakers,” “game changers,” and “imagination” are used interchangeably. In this section of my literature review, I will first summarize the main definitions of creativity, then describe how it has been studied and explain why it is important to future students.

Definitions of Creativity - How is Creativity Defined?

Put simply, creativity can be defined as “something both novel (i.e., original, unexpected), useful and appropriate (i.e., useful, adaptive concerning task constraints)” as by Sternberg and Lubart (1999). Most researchers and theorists agree that “creativity involves the development of a novel product, idea, or problem solution that is of value to the individual and/or the larger social group” (Hennessey & Amabile, 2010, p. 572). However, from this point, creativity gets more complicated as researchers from various disciplines study the subject.

One point of confusion is the relationship between imagination, creativity, and innovation. Robinson (2011) explains the differences between three interrelated ideas:

“imagination, which is the process of bringing to mind things that are not present to our senses; creativity, which is the process of developing original ideas that have value, and innovation, which is the process of putting new ideas into practice” (p. 2). In this definition, he differentiates between imagination, a trait inherent in young children, with the act of being creative. He offers the added complexity that a creative idea must have value. Fuentes (2017) offers a similar description that distinguishes creativity and imagination: “Creativity is an interconnection of ideas, experiences, and imagination” (p. 1). Both definitions imply that imagination is a part of the creative process or necessary for a creative outcome.

Another aspect that complicates the notion of creativity is the many layers of the concept. Hennessey and Amabile (2010) suggest a systems view of creativity, “a system of interrelated forces operating at multiple levels, often requiring interdisciplinary investigation” (p. 571). Figure 4 represents a visual of the major levels. In examining creativity, they use this model to organize their findings. However, they are very clear that research crosses levels and that certain concepts may crosscut several layers. Understanding this model is important to my research in schools. This model can be used to describe the intentional decisions international schools are making in various levels and to identify the levels that schools can influence through various initiatives.

Another important distinction when studying creativity is the distinction between the “small c creativity,” which occurs daily, and the larger idea of creativity. Csikszentmihalyi (1996) describes “small c creativity” as “an important ingredient of everyday life, one that we definitely need to enhance” (p. 8). These refer to the small ideas that enhance daily life but do not have a larger impact beyond the immediate environment. Articles in popular magazines that address creativity often refer to “small c creativity.” In many cases, “small c creativity” is

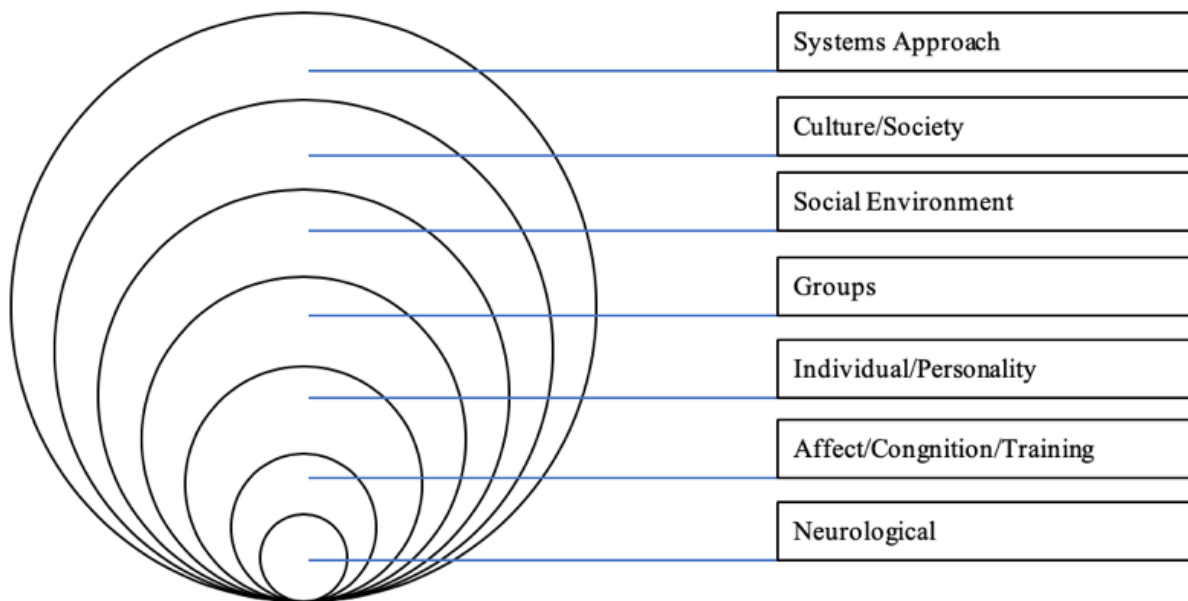


Figure 4. Hennessey and Amabile's major levels at which creativity operate.

inspired by surroundings and cultivated by an awareness of stimuli. These are often the skills that teachers refer to as “creative problem-solving skills.” To differentiate between “small c creativity” and the larger concept of creativity, Csikszentmihalyi (1996) states, “to have any effect, the idea must be couched in terms that are understandable to others, it must pass muster with the experts in the field, and finally it must be included in the cultural domain to which it belongs” (p. 27). Haier and Jung’s definition reinforces this idea that a creative idea must have purpose: “to be truly creative there must be some inherent utility in the product, whether it be for aesthetic consumption (e.g., modernism), to fill a technological need (e.g. the Internet), or to push our understanding of nature forward (e.g. theory of relativity). A new idea that does not contribute to the current understanding or society cannot be considered creative (Haier & Jung, 2008, p. 175)”. In other words, “small c creativity” describes everyday problem solving and the ability to adapt to simple changes in the environment. “Big C creativity” is more eminent, rarer and the outcomes have a greater impact. In this study, both types of creativity are considered and incorporated when referring to creativity in international schools.

In the realm of creativity, it is widely recognized that creative ideas do not arise from an isolated moment of inspiration but are instead shaped by the larger context in which they are formed. As Robinson (2011) notes, original ideas may stem from the creative inspiration of individual minds, but they do not emerge in a cultural vacuum. Csikszentmihalyi’s systems model of creativity further emphasizes the importance of context, highlighting three key components: the *domain*, the *field*, and the *person*. The *domain* comprises the symbolic rules and structures specific to the subject matter, including the cultural context encompassing the knowledge shared by a particular society. The domain can be a subject area, such as mathematics, or a finer topic, such as number theory. Within any given domain, the collective of

individuals, or the *field*, determine whether a new idea is worth incorporating. This model is distinct from Hennessey and Amabile's Levels Model. Csikszentmihalyi's (1996) systems view defines creativity as "any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one" (p. 28). In this systems view, a person can only be considered truly creative if they possess the requisite skills and contextual awareness to understand the domain and effectively communicate their ideas to the field. In other words, for an idea to be recognized as creative, the *person* must possess a deep understanding of the specific *domain* and be able to communicate the idea effectively to the *field*.

The study of creativity is complex, partly due to the various theories regarding what constitutes creativity. While some researchers focus solely on one element, such as the person's characteristics or the final product, others consider a range of factors that can be described as creative. Rhodes (1961) proposes the Four Ps model, which encompasses the person, process, product, and press (the environment) aspects of creativity. DeRosa's (2016) dissertation summarizes Rhodes' model as follows: an individual, methodology, or final product can be regarded as creative. The "press" component refers to the social norms that dictate whether a work is accepted as creative. Other researchers, such as Simonton (1990) and Runco (1992), have expanded on the Four Ps model to include persuasion (the ability to sell an idea) and creative potential as areas of study. Despite the varying approaches, the Four Ps model remains a valuable framework for understanding the multifaceted nature of creativity.

The definition of creativity is subject to debate among researchers, as multiple factors can be considered as contributing to creativity. However, there is a growing consensus that a creative idea in isolation is insufficient. The call for creativity indicates a need for more than just a singular moment of inspiration. As Robinson explains, creativity is a process that may begin with

a flash of a new idea or a hunch. It can also involve "noodling around" with a problem to generate fresh ideas, but it is not a single event. A genuine creative process entails critical thinking as well as imaginative insights and fresh ideas (Azzam, J, 2009). Robinson's view does not separate critical and creative thinking into two distinct concepts but rather emphasizes their interdependence in the creative process. Thus, critical thinking plays a vital role in fostering creativity by providing the framework for evaluating and refining new ideas. By incorporating critical thinking skills, individuals can develop a more comprehensive understanding of the context and constraints of a particular problem and generate more innovative solutions.

Robinson categorizes creative ideas into three types. These categories are combinational, exploratory, and transformational creativity (Robinson, 2011). Combinational creativity involves uniquely combining known or familiar ideas. A simple example may be of a chef creating a new dish by combining different cuisines or ingredients. Exploratory creativity, on the other hand, involves generating new ideas or artifacts within an existing domain based on accepted rules and conventional thinking. This is similar to Csikszentmihalyi's creative system. A graphic designer creating a new logo using standard design principles may be considered an instance of exploratory creativity. Transformational creativity describes creating new ideas previously thought impossible as they go beyond the existing conceptual space. For example, the invention of the first personal computer was a transformational idea that changed how people worked and communicated. Both exploratory and transformational creativity is specific to a particular sociocultural domain and require recognition from others to be considered creative ideas.

Research on Creativity - What does Research on Creativity Suggest?

The study of creativity has evolved, with varying beliefs about its origin and nature. While the creative person has been the focus of many investigations, there is growing

recognition that creativity is a complex and multifaceted phenomenon difficult to predict or replicate. In the previous section, I examined how various scholars have defined creativity. In this section, I provide an overview of the vast research on creativity. Through my research from various sources, I have found that creativity has been researched from educational, psychological, neurological, and sociological angles by many scholars in a variety of different fields (Densky, 2003; Rhodes, 1961; Runco, 1992; Simonton, 1990; Sternberg & Lubart, 1999).

Historically, creativity was often attributed to divine intervention from a higher being. The Ancient Greeks believed that their creative achievements were directly inspired by the Muses and considered a mystical force. This belief continued through the Middle Ages when artists rarely signed their work out of respect for the divine origin of their ideas. However, during the Renaissance, artists began to attribute their creative output to their individual. Despite this shift, many musicians, artists, and writers continued to describe their inspiration as a "wave of emotion" (E.B. White), a "wave in the mind" (Virginia Woolf), or a "flash of illumination" (Freeman Dyson). Johann Aloys Schlägler, the author of the first biography on composer Ludwig van Beethoven, wrote that Beethoven attributed the essential mystery and inspiration from nature as the heart of his creative work, "which no framework or discipline or routine can manufacture" (Popova, 2019b).

This has led to research to determine the biological differences between individuals who have proven highly creative and those with low creativity. One study area includes the close examination of preserved brains of some of the world's influential luminaries, such as Albert Einstein, Joseph Stalin, Walt Whitman, Benito Mussolini, and Vladimir Lenin. Upon Einstein's death, Thomas Harvey autopsied and preserved his brain which became available for researchers 20 years after his death. Many scientists, such as Sandra Witelson, Dean Falk and Marion

Diamond have found differences between Einstein's brain and other control brains. However, as Goldberg (2019) states, "any conjecture remains a matter of speculation" (p. 34). This is due to the fact that scientists are not able to determine whether these differences are a reflection or an origin of their creative work. Work with other preserved brains has also shown little difference in size or structure of the brain.

There is another approach to studying the brain to unlock the brain's role in creativity. As neuroscience has developed, "cognitive neuroscience has emerged as an important approach that allows researchers to understand what happens inside the brain when performing creative tasks" (Zhou, 2018, p. 21). Using electroencephalography (EEG), functional magnetic resonance imaging (fMRI), and positron emission tomography (PET), scientists can study brain regions to explore the brain's workings during various creative tasks. The fMRI allows neuroscientists to capture images of the brain in action. By presenting a cognitive assessment for participants to perform a series of simple tasks, the fMRI can track blood flow in the brain to track active brain regions. "Neuroscience research has provided evidence that some short-term, well-arranged, non-arts creativity education and trainings are effective in improving individuals' creativity thinking" (Zhou, 2018, p. 27).

The debate over whether creativity is an inherited or acquired trait has been ongoing for decades. While some researchers argue that creativity is primarily innate, others contend that creativity can be developed through training and practice. According to Kaufman and Beghetto (2009), "there is growing evidence that creative potential and achievement are significantly influenced by environmental factors, such as family environment, education, and work experience" (p. 482). Similarly, Runco and Jaeger (2012) suggest that while some aspects of creativity may be inherited, "many of the elements of creativity appear to be learnable and

teachable" (p. 8). This view is supported by research into the effectiveness of creativity training programs, which have shown that individuals can increase their creative abilities through intentional practice (Scott & Leritz, 2016; Zhu & Chang, 2019).

However, other researchers argue that creativity is primarily determined by genetic factors. For example, a study by Kéri (2011) found that individuals who possess a genetic variation related to the neurotransmitter dopamine are more likely to exhibit creative thinking. Similarly, Rietveld et al. (2013) found that certain genetic markers were associated with higher levels of creative achievement. These findings suggest that there may be a genetic basis for creativity. However, it is important to note that genetics alone are unlikely to determine an individual's creative abilities and that environmental factors also play a significant role in the development of creativity. Overall, while the nature versus nurture debate regarding creativity is complex, genetic and environmental factors appear to contribute to an individual's creative abilities.

Numerous studies have examined the relationship between creativity and academic achievement in schools. According to Sahu (2015), "creativity is essential for academic success and is one of the most important qualities that students need to develop" (p. 5). Research has shown that fostering creativity in schools can lead to better problem-solving skills, increased motivation, and improved academic performance (Craft et al., 2001; Kaufman & Sternberg, 2010). Moreover, creativity can play a crucial role in preparing students for the challenges of the 21st century, where innovation and originality are highly valued (Robinson, 2011).

Despite the importance of creativity in schools, many challenges exist in implementing creative practices into the classroom. According to Côté-Bouchard and Kearney (2016), "teachers face multiple challenges in fostering creativity in the classroom, including time

constraints, lack of resources, and pressure to cover curriculum content" (p. 68). In addition, many educators may not have received training to promote creativity among their students effectively. As a result, it is essential to provide teachers with professional development opportunities to enhance their understanding of creative practices and their ability to implement them effectively in the classroom (Ghousseini & Frykholm, 2016).

While research has shown that fostering creativity in schools can lead to positive academic outcomes, the relationship between creativity and academic achievement is complex and multifaceted. As Cramond (2013) notes, "while creativity and academic achievement are often positively correlated, the relationship is not straightforward and is influenced by various factors, such as the type of task, the level of challenge, and the individual's motivation" (p. 82). Therefore, it is essential to approach creativity in schools holistically and consider how various factors may interact to influence students' creative development and academic achievement.

Creative Thinking Skills - How are Creative Thinking Skills Acquired and Developed?

Creativity is a broad term that refers to the ability to generate new and innovative ideas or solutions to problems. On the other hand, creative thinking skills refer to the specific cognitive abilities and processes involved in generating creative ideas. While creativity is a more general term encompassing a wide range of abilities, creative thinking skills are the specific abilities and processes that enable individuals to be creative. Although some individuals may have a natural talent for creative thinking, the research outlined in the previous section implies that developing this skill through practice and training is possible. This section articulates how creative thinking skills can be acquired and developed.

The acquisition of creative thinking skills involves several factors, such as engaging in divergent thinking, building domain-specific knowledge, exposure to diverse perspectives, and adopting a growth mindset (Dweck, 2008b; Hennessey & Amabile, 2010; Sawyer, 2012).

Divergent thinking is vital to developing creative thinking skills and entails generating multiple ideas or solutions to a problem instead of relying on a single approach. Individuals can employ techniques such as brainstorming, mind mapping, or free writing to facilitate divergent thinking. Design-thinking models stress the importance of these methods to foster a high level of idea generation without the hindrance of self-censorship or criticism. Through this process, individuals can identify new possibilities and connections that may have been overlooked previously (Hennessey & Amabile, 2010; Sawyer, 2012). As all definitions of creativity emphasize the novelty of an idea, the process of conjuring multiple possibilities allows for the consideration of unlikely solutions or understandings.

Another means of enhancing creative thinking skills is to develop domain-specific knowledge. This involves a deep understanding of a particular subject matter. By attaining expertise in a field, individuals can identify new opportunities and possibilities that may be inaccessible to others. Csikszentmihalyi's systems view supports a strong understanding of concepts for innovative ideas to be generated and, more importantly, accepted. A prime example is Steve Jobs, who had a profound understanding of technology and design, enabling him to develop groundbreaking products such as the iPhone and iPad (Hennessey & Amabile, 2010). In this case, combining two domains resulted in an unconventional and revolutionary outcome.

In addition to developing domain-specific knowledge, exposure to diverse perspectives and experiences can catalyze creativity. Sawyer (2012) argues that exposure to new ideas and experiences can spark creativity and lead to new insights. Exposure to diverse perspectives can

be achieved through activities such as traveling, reading widely, or engaging in new hobbies. Experiences will lead individuals to broaden their understanding of the world and identify new possibilities, cultivating their creative thinking skills. The process of iterating and refining ideas based on feedback also supports the idea of exposure to diverse perspectives, as it involves taking feedback from users and stakeholders with different backgrounds and experiences (Kim & Mauborgne, 2015). Mere exposure to diverse perspectives is not enough; empathy and understanding users' needs and perspectives are critical. Design thinking is a model in which creative thinking skills are required for an open-minded approach willing to consider multiple perspectives and take a human-centered approach to problem-solving (Brown, 2008).

Developing creative ideas requires more than just divergent thinking and understanding multiple perspectives. DeRosa (2016) states creativity requires cognitive and non-cognitive elements. Non-cognitive elements include emotional intelligence, motivation, and resilience. Emotional intelligence allows individuals to recognize and manage their emotions and understand and empathize with others. Motivation drives individuals to pursue their creative goals and persist in facing obstacles. Resilience helps individuals bounce back from failure and setbacks. These three things can be described as a growth mindset.

Individuals with a growth mindset believe their abilities can be developed through effort and perseverance rather than fixed traits (Dweck, 2008b). This perspective can lead individuals to approach challenges with optimism and a willingness to take risks, which can foster creativity and innovation. Furthermore, adopting a growth mindset can help individuals overcome the fear of failure, as they see setbacks as opportunities for growth and learning.

Summary of Creativity

Many definitions attempt to explain the creative person's traits, such as the amount of a person's imagination to the inherent ability of a person to produce novel ideas. For my case study, creativity is defined as “the generation of products or ideas that are both novel and appropriate” (Hennessey & Amabile, 2010, p. 570). The definition of novel and appropriate is dependent on the context of the product or idea. Since my work is regarding the intentional decisions in schools to foster creativity, I do not examine students' neurological differences, personalities, or the impact of creativity on students. Rather, I focus on the intentional changes in a school's social environment, culture, or systems to foster creativity in students.

Creativity in School Settings

As previously mentioned, creativity in schools is a growing topic of interest for researchers, educators, and policymakers. Creativity is considered an essential skill for success in the 21st century, and there is growing concern that schools need to do more to foster student creativity. Scholars for generations have designed tools to measure creativity (Torrance, 1966), studied its development in children (Amabile, 1996) and monitored its rising need (Robinson, 2011). In 2002, the non-profit organization the Partnership for 21st Century Skills was founded to “focus on infusing 21st century skills into education” (2008, p. ii). Their P21 Framework for 21st Century Learning lists creativity as one of the “4Cs,” a set of key learning and innovation skills. This section examines studies on creativity in schools and addresses how schools have attempted to address creativity nationally and internationally.

History of Creativity in Schools - How and When did Creativity Become an Important Goal for Schools?

This section provides a chronological overview of creativity in schools, outlining two main shifts. The first is that creativity can be, and more importantly, should be, fostered in students in a school context. The second is that creativity is not a personal trait or disposition but rather a set of specific skills referred to as creative thinking skills. While the examples mentioned here are from the United States, educational reform movements have similarly influenced international schools, with the same motivations and intentions.

In the early 20th century, the concept of creativity began to gain recognition as an important aspect of education. According to Kaufman and Beghetto (2009), the idea of creativity in education emerged from the work of educational psychologists such as John Dewey and Edward Thorndike. Dewey believed education should focus on the development of the whole person, including their creative potential. He emphasized the importance of experiential learning and the need for students to participate actively in their learning. Thorndike viewed creativity as a cognitive ability that could be measured and trained through standardized tests. Both scholars believed creativity was an educator's imperative and sought to determine how this could be done in a school context. This was a novel idea; previously, creativity was considered an inherent trait or personal characteristic.

The first formal movement to introduce creativity into schools started in the 1920s with the New Education Movement in Europe and the United States. This movement believed traditional schooling was too rigid and stifling creativity and focused on the importance of student-centered learning to develop critical thinking and problem-solving skills. The focus was on developing the whole child, including their creative and emotional development and academic

achievement. Like Dewey and Thorndike, the movement was founded on the idea that creativity could be nurtured and developed in all students, not just those who showed a natural talent for it. Despite the New Education Movement's efforts, creativity was integrated in the 1950s and 1960s with the rise of the post-war progressive education movement. This period saw an increased emphasis on the arts, literature, and creative writing in the curriculum and teachers were encouraged to adopt a more facilitative role in the classroom to encourage student creativity.

Creativity in international schools can be traced back to the 1960s when the first international school was established in Geneva, Switzerland. Historically, international schools were founded to provide education for the children of expatriates, diplomats, and international businesspeople, and thus, had diverse student populations. This diversity led to recognizing the importance of creativity in education, as it helped students develop cross-cultural communication skills and global competencies. As parents of students in international schools were often employed in global fields, they also valued these skills. In early international schools, creativity was often viewed as an extracurricular activity rather than an integral part of the curriculum. However, with the increasing recognition of the importance of creativity in education, many international schools began to incorporate creative thinking skills into their curriculum. The International Baccalaureate (IB) program, established in 1968, was one of the first international education programs to emphasize the importance of creativity in education. The IB program aims to develop students who are creative, critical thinkers, and problem solvers, and thus, it strongly focuses on developing creativity in its students.

In the mid-20th century, E. Paul Torrance and Jacob Getzels contributed significantly to the growth of the emphasis on creativity in education (Runco & Jaeger, 2012). Torrance developed the Torrance Tests of Creative Thinking (TTCT), widely used to assess creativity in

children. The TTCT measures creativity through various tasks, including drawing and completing incomplete figures, and has been shown to have high levels of reliability and validity (Kim & Mauborgne, 2015). The TTCT has been used in numerous studies of creativity in education, including studies examining the impact of creativity training programs on student performance (Kaufman & Beghetto, 2009).

Getzels, on the other hand, emphasized the importance of the creative process in education, arguing that creativity was not just about the final product but about the journey of discovery and exploration that led to that product (Getzels & Csikszentmihalyi, 1976). Getzels believed creativity could be fostered in schools by providing students with opportunities to engage in open-ended problem-solving activities and exploring multiple solutions to a given problem.

In the 1980s and 1990s, creativity in schools took a backseat to a more standardized approach to education, with a focus on achieving measurable outcomes in core academic subjects. This shift led to a narrowing of the curriculum, with subjects such as art and music being cut from many schools. However, the emphasis on creativity has resurfaced in recent years, with the recognition that creativity and innovation are essential skills in the 21st century workforce. As a result, many schools have reintroduced creative subjects into the curriculum and are exploring new ways to foster creativity in their students. Curriculum reform has also changed schools in the United States and overseas. For example, introducing the Common Core State Standards in the United States has led to a renewed focus on creativity and innovation in the classroom and less emphasis on content acquisition. In addition, the rise of the maker movement and the use of technology in education has opened up new opportunities for students to engage in creative problem-solving and design thinking. These educational approaches will be examined in

depth later in this chapter. Despite progress made, much work must be done to fully integrate creativity into the education system and ensure that all students have the opportunity to develop their creative potential (Craft, 2011).

Studies on Creativity in Schools - How are Creative Thinking Skills Developed in Children?

As previously mentioned, creative thinking skills are developed through several factors, such as engaging in divergent thinking, building domain-specific knowledge, exposure to diverse perspectives, and adopting a growth mindset (Dweck, 2008b; Hennessey & Amabile, 2010; Sawyer, 2012). Throughout the shifts in schools to focus more on creativity, studies have also been conducted to understand better how creative thinking skills are developed in children. Creative thinking is a cognitive process that involves the generation of novel ideas and the ability to think outside the box. This section summarizes research on how creative thinking skills are developed in children and strategies for fostering creative thinking skills in children, including the role of teachers, the impact of the curriculum, and the importance of the classroom environment.

Role of Teachers

Unsurprisingly, teachers are instrumental in developing creative thinking skills in students. Ho and McWilliam (2020) state, "Teachers play a critical role in fostering creativity in their students. They are responsible for creating an environment that is conducive to creative thinking and providing students with opportunities to explore and experiment with different ideas and perspectives" (Ho & McWilliam, 2020, p. 2). Educators are responsible for designing learning experiences and deciding how students engage with learning. There are various strategies that educators can use to foster creative thinking skills in children, incorporating

creativity into the curriculum, providing opportunities for collaboration and team-building, and encouraging self-reflection and self-evaluation. According to Beghetto and Kaufman (2014), educators must prioritize the development of creative thinking skills in children to prepare them for future challenges.

While teachers have an essential role in developing these skills in their students, they face multiple obstacles in developing creative thinking skills in their students. According to Roshan (2017), one of the challenges teachers face in developing creative thinking skills is the need to understand creative thinking and how they can develop these skills in their students. The lack of understanding may “result in the inability to incorporate creative teaching methods into lessons, a lack of motivation to engage in creative thinking activities, and an inability to assess and recognize creative thinking skills in students” (Roshan, 2017, p. 4). Teacher education programs focusing on creative thinking skills attempt to alleviate this problem. One example is the Master of Arts in Teaching (MAT) program at the University of North Carolina at Charlotte. According to the program website, “the MAT program places a strong emphasis on preparing teachers who are effective in promoting critical and creative thinking skills in their students.” The University of Nevada, Las Vegas and the University of Texas at Arlington offers a Master of Education in Curriculum and Instruction with similar missions. These programs align with the findings of a study by Davis et al. (2016), which suggests that “teacher education programs that emphasize the development of critical thinking and creativity skills in students can be effective in improving student outcomes” (p. 65).

Teaching creative thinking skills may have been a focus for many in their teacher education programs. Ongoing professional learning is also effective for educators who seek to address the development of creativity in their classrooms and schools. Teachers need to be

provided with professional development to learn and experiment with creative teaching methods and opportunities to collaborate with other teachers (Dhakal, 2016). There is evidence to suggest that professional development programs later in a teacher's career can be effective in developing creative thinking skills in students. For example, a study by Wang and Guo (2021) found that "professional development programs that focus on creative thinking can improve teachers' ability to develop and implement strategies for promoting creativity in their classrooms" (p. 101). Another study by Koçak and Özkan (2016) found that participation in such programs increases the likelihood that teachers will promote creativity after the program ends. Teachers in international schools come from different educational backgrounds and schoolwide professional development initiatives may provide alignment of approaches within a school.

Similarly, a study by Peker and Küçüközer (2018) examined the impact of a professional development program on teachers' attitudes toward creativity in education. The study found that "teachers who participated in the professional development program had more positive attitudes toward creativity in education than those who did not participate" (Peker & Küçüközer, 2018, p. 103). These studies suggest that professional development programs can help to change teachers' attitudes toward creativity and innovation and can help teachers develop the knowledge and skills necessary to incorporate creative thinking into their teaching effectively.

Another challenge highlighted in a study by Noyce (2015) is the lack of time for teachers to incorporate creative thinking activities into their lessons. Teachers may feel pressured to cover the required curriculum, leaving little time for creative thinking activities. Another challenge is the lack of resources and materials for creative thinking activities. Insufficient resources can be due to a need for more funding or the resources being directed to other areas of the school (Dhakal, 2016). Noyce (2015) also elaborates that school leaders must prioritize the development

of creative thinking skills and provide teachers with the time and resources they need to incorporate creative thinking activities into their lessons. Needed support can include funding resources and materials and creating collaboration and professional development opportunities.

Additionally, international school teachers may face parent opposition to fostering creative thinking skills. Evidence suggests that parent support and attitude toward creativity can impact the effectiveness of developing creative thinking skills in students at a school (Beghetto et al., 2011; Kim & Lee, 2018; Runco & Albert, 2010). Kim and Lee (2018) found that "parental support for creativity has a positive impact on the development of creative thinking skills in children" (p. 259). These studies suggest that when parents support creativity, children are more likely to develop their creative thinking skills. A prevalent theme in international schools is the clash between the home and school culture. Cultural factors can play a role in shaping parental attitudes towards creativity and innovation in education. For example, a study by Chen, J. et al. (2018) found that "Chinese parents tend to value academic achievement over creativity and are less likely to support creative thinking skills in their children" (p. 98). Similarly, a study by Cheung and Ng (2018) investigated the impact of cultural factors on parental attitudes towards creativity in Hong Kong. The study found that "cultural factors, such as the emphasis on conformity and the fear of failure, can inhibit parental support for creativity in education" (Cheung & Ng, 2018, p. 105). Moreover, Zhou and Li (2019) found that "Confucian cultural beliefs, such as the emphasis on diligence and hard work, can lead to a devaluation of creativity in education" (p. 407). By understanding the cultural factors that influence parental attitudes towards creativity, educators can work to foster a more supportive and creative learning environment for all students.

Impact of Curriculum

The previous section examined the role of the teacher and the challenges educators may face in an international context. Another study by Plucker and Makel (2010) investigated the impact of the curriculum on creativity in schools. The study found that while many schools value creativity, the curriculum emphasizes memorization and rote learning over creative thinking. The authors argue that schools must restructure the curriculum to promote creativity and allow students to explore their interests and passions. In this section, I summarize the importance of an inquiry model, a transferable curriculum, and the link between creative thinking skills and acquiring academic knowledge.

Curiosity and imagination are essential components of creative thinking. Children are naturally curious, and educators must encourage and nurture their curiosity. According to Beghetto and Kaufman (2014), creating a culture of inquiry is critical in fostering curiosity and creativity in children. A rich classroom culture can be achieved by allowing children to ask questions, explore, and investigate the world around them. An inquiry model of instruction can foster creative thinking skills in students by providing opportunities for exploration, problem-solving, and critical thinking. Lin, P. Y. and Lin, C. H. (2017) examined the impact of an inquiry-based learning model on developing creative thinking skills in Taiwanese elementary school students. Similar research was conducted by Şahin (2016) with Turkish high school students. Lin, P. Y. and Lin, C. H. (2017) state that "students who participated in the inquiry-based learning model showed significant improvements in their creative thinking skills compared to those who did not participate" (p. 99). According to Grigg and Lomas (2016), "an inquiry-based learning model can promote creative thinking skills by encouraging students to explore and develop their own ideas and solutions to problems" (p. 230). By providing opportunities for

exploration, problem-solving, and critical thinking, the inquiry model develops creative thinking abilities and supports students in becoming more innovative learners.

As an “experts’ knowledge is organized around important ideas or concepts” (Bransford, J.D. et. al, p. 42), school curriculum and learning should be planned to lead to conceptual understanding rather than superficial coverage of facts. Time devoted to developing important concepts and organizing ideas should be a focus to develop creativity in students. The Third International Mathematics and Science Survey (TIMSS; 2000), criticized the American curriculum for being “a mile wide and an inch deep,” indicating a need for standards to focus on fewer facts and aim for deeper conceptual understanding. The implications of such criticism have led to reforms in American standards. For example, the Next Generation Science Standards (NGSS) introduced “crosscutting concepts” to improve science and engineering teaching in the United States. The NGSS (2013) identified “seven crosscutting concepts that bridge disciplinary boundaries, uniting core ideas throughout the fields of science and engineering”. The expensive number of standards is a particular challenge for international schools as schools adopt national curriculum standards and add language expectations to their programs.

Creativity requires an understanding of the domain and the ability to judge whether a novel idea is viable. As previously mentioned, Csikszentmihalyi’s creative system idea emphasizes a strong knowledge base about a particular field before creativity and innovation can occur. Constructivist and inquiry-based classrooms are necessary for creative thinking because knowledge acquisition must occur for transfer to occur. Instructionalist models of learning view learning as the acquisition of knowledge from the teacher to the student. It lacks the unpredictability and novelty necessary for creative thinking. Dewey’s constructivist model focuses on students learning through experiences. However, he emphasizes the quality of

experiences in furthering student learning. He clearly points out that “it is a mistake to suppose that the mere acquisition of a certain amount of arithmetic, geography, history, etc., which is taught and studied because it may be useful at some point in the future” (Dewey, 1938, p. 47). He further elaborates that skill acquisition will not automatically lead to effective use in different contexts and conditions.

The ability of students to transfer their acquired learning to another context is crucial to developing creative thinkers. However, initial learning must occur for transfer to occur, and teachers must keep this idea in mind when designing their learning environments. Mayer's (1989a) research on the cognitive views of creativity highlights the importance of transfer performance in creative learning. Mayer defines creative learning as the relationship between retention performance and transfer performance, depicted in Table 2. According to Mayer (1989b), creative learners are those who not only retain information but can also transfer it to new and different contexts (p. 549). In contrast, noncreative learners retain information but need more transferability skills to apply it to new contexts, while non-learners perform poorly in retention and transfer (Mayer, 1989b). Transfer performance is crucial to creative thinking because it involves applying knowledge and skills to new and unfamiliar situations (Bransford et al., 2000). To develop creative thinking skills, educators must design learning experiences that encourage students to transfer their knowledge and skills to new contexts (Sawyer, 2011b). Students who can transfer their learning to new and diverse contexts are more likely to generate innovative solutions and ideas (Perkins & Salomon, 1989).

One way to encourage transfer performance is to use interdisciplinary approaches to learning (Sawyer, 2011b). Interdisciplinary learning allows students to apply their knowledge

Table 2

Three Possible Learning Outcomes

Type of Outcome	Retention Performance	Transfer Performance
No learning	Poor	Poor
Noncreative learning	Good	Poor
Creative learning	Good	Good

and skills to multiple contexts and encourages them to see connections between different subjects and areas of study. Providing opportunities for students to engage in real-world problem-solving can also facilitate transfer (Bransford et al., 2000). By addressing authentic problems, students are more likely to develop transferable skills to apply to other contexts (Sawyer, 2011b). Another key idea about transfer is that “transfer is best viewed as an active, dynamic process than a passive end-product of a particular set of learning experiences” (Bransford et al., 2000, p. 53). Learners can “choose and evaluate strategies, consider resources, and receive feedback” (Bransford et al., 2000, p. 66). In addition, instruction at higher levels of abstraction will enhance transfer. When the learning context is specific, students may not realize opportunities to transfer their learning to other contexts. Working with students to become more aware of their learning and monitor their strategies will “increase the degree to which students will transfer to new situations without the need for explicit prompting” (Bransford et al., 2000, p. 67).

While there is growing interest in promoting creativity in schools, there are also several challenges with implementation. One of the biggest challenges is the pressure to focus on standardized test scores and academic achievement. Many schools are reluctant to devote time and resources to creative activities that may not directly improve test scores or academic outcomes. However, there is some evidence that promoting creativity in schools can lead to improved academic outcomes. For example, a Runco (1992) study found that creativity is positively correlated with academic achievement in several areas, including language arts, math, and science. Research of this nature suggests that promoting creativity in schools can lead to improvement in academic performance by encouraging students to think more critically and solve problems more effectively. However, not all studies have found a clear link between

creativity and academic outcomes. Cropley et al. (2012) found that while creativity positively correlates with academic achievement in some areas, the relationship is inconsistent across disciplines. The study suggests that while creativity is important, it may not be the only factor contributing to academic success. The discrepancy in these findings may suggest that further research in the field is required.

The Learning Environment

The learning environment is crucial in the development of creative thinking skills. A learning environment refers to the physical, social, and emotional conditions and contexts in which learning occurs. Sawyer (2011a) states “that learning environments must be designed that address the *teaching paradox*: to find the balance of creativity and structure that will optimize student learning” (p. 17). Rather than focusing solely on individuals, it is essential to consider the broader sociocultural context that fosters creativity. Educators must focus on fostering an environment that nurtures creativity rather than solely focusing on individual traits. The learning environment encompasses a range of formal and informal factors, including the physical space and resources available for learning, the social interactions among learners and educators, and the emotional climate of the learning setting. In this section, I will focus on the latter two.

Social interactions among learners and educators can play a significant role in shaping the learning environment and fostering the development of creative thinking skills in students. When learners and educators interact collaboratively, they create a supportive and engaging environment that encourages exploration, experimentation, and innovation. According to a study by Baer et al. (2003), “collaborative interactions among learners can enhance the development of creative thinking skills by encouraging divergent thinking, promoting alternative perspectives, and facilitating the generation of new ideas” (p. 239). Collaborative learning can also help to

promote communication skills, cooperation, and empathy among students, all of which are important components of a creative learning environment. Sawyer (2012) found that collaboration can stimulate creative thinking by exposing individuals to new ideas and perspectives, suggesting that schools need to promote collaboration among students and create a culture that values teamwork and cooperation. He states: “Creative learning involves emergence at both the individual level and the group level. At the individual mental level, new conceptual structures emerge within an individual’s mind. At the group level, the collaborative conversations that contribute to creative learning are characterized by collaborative emergence” (Sawyer, 2012, pp. 15-16).

A positive learning environment is one that is safe, supportive, and conducive to learning, and can significantly impact the effectiveness of teaching and learning and the development of learners' cognitive, social, and emotional skills. Jaipal-Jamani and Mitchell (2016) found that "a positive and supportive learning environment can facilitate the development of creative thinking skills in students by encouraging exploration, experimentation, and risk-taking" (p. 173). Similarly, a study by Chen, Hong, et al. (2018) investigated the impact of the learning environment on the development of creative thinking skills in Chinese middle school students. The study found that "a positive and stimulating learning environment can promote the development of creative thinking skills by providing opportunities for collaboration, inquiry, and problem-solving" (p. 102). Overall, these studies suggest that the learning environment can play a critical role in fostering the development of creative thinking skills in students.

Numerous studies have supported the importance of play in the development of creative thinking skills. Play is a fundamental activity in childhood that provides children with opportunities to explore and experiment with the world around them. Children develop motor,

cognitive, social, and creative thinking skills through play. Play is also an essential component in the development of creative thinking skills. A study by Pellegrini and Galda (1998) found that "playful experiences can promote the development of creativity in children by providing opportunities for exploration, imagination, and self-expression" (p. 72). Russ (2003) examined the role of play in children's creativity development and found that "playful experiences can enhance creativity by providing opportunities for children to express their emotions, explore new ideas, and solve problems in novel ways" (p. 118). According to Amabile (1996), play provides children with opportunities to engage in divergent thinking, a critical aspect of creative thinking. Through play, children can explore different possibilities, generate multiple ideas, and refine solutions to problems. Similarly, a study by Chouinard (2007) investigated the impact of play on creative thinking skills in a sample of preschool children. The study found that "children who engaged in more play showed greater levels of creative thinking, including divergent thinking and originality, compared to children who engaged in less play" (Chouinard, 2007, p. 256). Overall, these studies suggest that play is a fundamental activity in childhood that can play a critical role in the development of creative thinking skills. By providing opportunities for exploration, imagination, and self-expression, play can help children to develop their creativity and innovative thinking abilities.

Exposure to diversity is a critical component in developing creativity in children. According to Kim and Ko (2012), exposure to diverse perspectives and experiences can broaden children's thinking and stimulate creativity. Digital media can also expose children to diverse perspectives by facilitating connections with people from different cultures and backgrounds, which is essential in developing creative thinking skills. Hong and Page (2004) found that "diverse perspectives can enhance creativity by providing opportunities for individuals to

generate new ideas and insights, and to challenge their assumptions and beliefs" (p. 142). Moreover, a study by Plucker et al. (2004) examined the impact of diversity on creativity in a sample of gifted and talented students. The study found that "exposure to diverse perspectives and experiences can enhance creativity by promoting cognitive flexibility, the ability to think outside the box, and the willingness to take risks" (Plucker et al., 2004, p. 358). Overall, these studies suggest that diversity can support the development of creative thinking skills in students by providing opportunities for exposure to diverse perspectives, experiences, and ideas. By promoting a more open and inclusive learning environment, educators can help students to develop their creativity and innovative thinking skills.

The acquisition of creative thinking skills involves engaging in divergent thinking, building domain-specific knowledge, exposure to diverse perspectives, and adopting a growth mindset. Teachers must also be aware of learning theory and design learning environments that foster transfer by providing opportunities for students to choose and evaluate strategies, consider resources, and receive feedback. By cultivating creativity, individuals can become more effective problem solvers and innovators.

In conclusion, recent studies suggest that there is growing interest in promoting creativity in schools. However, there are also several challenges with implementation, including pressure to focus on standardized test scores and a need for more training and support for teachers. While there is some evidence that promoting creativity can lead to improved academic outcomes, the relationship between creativity and academic performance is complex and may not be consistent across all subjects. As schools continue to grapple with these challenges, it is clear that promoting creativity will require a concerted effort from educators, policymakers, and the

broader community. The next section outlines some initiatives international schools have taken to address developing creative thinking skills.

Educational Approaches - How are Schools Attempting to Build Creative Thinking Skills in their Students?

While many investigations of creativity focus on the creative person, there is a growing recognition that creativity is a complex and multifaceted phenomenon that is difficult to predict or replicate. Instead, as educators, it is essential to focus on building creative thinking skills, enhancing the traits of students and creating classroom environments that nurture existing traits that allow for students to engage in the creative process.

While there are links to 21st Century Learning skills in these approaches, there needs to be more research to identify the direct link in fostering creative thinking skills. These approaches have been selected for my review for the following reasons: (1) they are broad ideas that have been adopted by many schools in the US and in international schools, (2) they are all approaches that address the 21st Century Learning skills identified by the P21 framework and other researchers, and (3) they are all aligned with learning theories that foster creativity. First, I discuss the project-based learning (PBL) approach. Then I examine the interdisciplinary or transdisciplinary approach, including the STEM/STEAM movements and Maker Spaces built at many international schools. Finally, I examine the more recent design process implementation in elementary schools. Many of these concepts overlap in pedagogy and rationale, however, these examples will explore the attempts international schools have made to address creativity and other future-ready skills. Implemented well, these programs and approaches may boost creativity in elementary-age learners. However, I explore the possibility that without key elements, they

produce surface-level change in student creativity and do not lead to sustainable creative thinking skills in students.

Project-Based Learning (PBL)

The Project-Based Learning (PBL) approach and exposure of students to real-world problem-solving have a strong foundation in learning theory. In the early 20th century, John Dewey challenged schools to provide active experiences that prepare students for the real world. Maria Montessori campaigned for this approach to early childhood learning. Both believed that well-designed projects and learning environments fostered problem-solving skills in students. A problem solving approach became the key teaching strategy for practical learning in medicine, engineering, and economics more than half a century ago. Instructors in these fields presented complex problems for students, which allowed for creative problem-solving as multiple solutions would work. Students and instructors would then debate and discuss each solution, allowing for students to apply their learning in real-life contexts.

In K-12 education, a problem solving approach has evolved into learning core content, such as numeracy and literacy, using an open-ended project. Mosun explains Clark's definition of PBL as "in-depth investigations where students engage in the development of investigative activities resulting in a product or performance (Mosun, 2018, p. 18)." Projects are framed with open-ended questions that students investigate, research and construct their own solutions. There are five key components of effective PBL: curriculum-focused; inquiry-driven; investigative and knowledge-building; student-driven and real-world focused (Darling-Hammond et al., 2017). Students learn through projects rather than simply completing them at the end of their unit. Project-based learning replaced the traditional units of instruction and unified otherwise

disparate subjects and strands of teaching in learning. There are many aspects of interdisciplinary learning, which is the focus of this chapter's next section. David states:

core idea of project-based learning is that real-world problems capture students' interest and provoke serious thinking as the students acquire and apply new knowledge in a problem-solving context. The teacher plays the role of facilitator, working with students to frame worthwhile questions, structuring meaningful tasks, coaching both knowledge development and social skills, and carefully assessing what students have learned from the experience. Advocates assert that project-based learning helps prepare students for the thinking and collaboration skills required in the workplace. (David, 2008, p. 80)

Students work collaboratively with peers and teachers during project-based learning, emphasizing student-directed learning and choice. In many cases, choices are offered in how students demonstrate their knowledge and skills in a final project. Presenting learning or sharing the final product to a real audience is ideal. In international schools, where 1:1 student access to a technology tool is the norm, students have scope in their research methodologies, final product development, and sharing their findings with the community and the larger world. Projects build student autonomy and information, media, and technology skills. The real-world context for learning creates a strong necessity and context for new information, which is said to increase student motivation. Lehrer and MacConnell (2018) explain, “authenticity in a project can be defined as a shortened timeline between learning concepts and skills and meaningful application of those skills” (para. 2).

The challenge with project-based learning is the time teachers need to plan together to develop something meaningful in their context. Careful project planning that reflects the country of the international school is necessary. Many of the project exemplars and PBL resources are

based in the United States, which need to be adapted for an international school or redesigned altogether. In most cases, international educators arrive in the country to work in an international school, often referred to as a “bubble” for the expat community. Teacher induction programs at international schools often address the country's cultural aspects but do not develop the deep understanding of the context necessary to develop meaningful project-based learning opportunities for their students. Lehrer and MacConnell (2018) outline what project planning should include: “identifying standards, enduring understandings, driving questions, researching fieldwork opportunities, connecting with experts and prototyping final products” (para. 4). Language teachers or other faculty from the host country are often not part of the planning process. The exclusion of host country faculty can be due to the lack of training in PBL methods of teacher certification programs in other countries. Other times the lack of collaborative planning is due to logistical reasons such as the scheduling of common planning time.

Project-based learning has many elements aligned with learning theory that support creative thinking. In the next section, I explore another approach that international schools have adopted to develop student creativity.

Interdisciplinary Learning

Interdisciplinary instruction is another common approach in international schools to address creative thinking skills. Interdisciplinary instruction “involves bringing together distinctive components of two or more disciplines” (Nissani, 1995). In other words, it refers to the use of methods from more than one discipline to examine a theme, issue, question, or topic. Interdisciplinary teaching differs from multidisciplinary or cross-disciplinary teaching since it requires integrating and synthesizing different perspectives rather than considering multiple viewpoints. This is not a new concept. Educators like Dewey viewed an integrated curriculum as

a means to “developing the critical attitudes in students that would enable them to participate as informed citizens in a democracy” (Mathison & Freeman, 1998, p. 5). In the early 90s, the focus shifted from “subject matter integration,” where the focus was on combining content knowledge, to an interdisciplinary approach, which refers to a concept more focused on the integration of learning processes that leads to knowledge integration.

While interdisciplinary instruction does not explicitly address cultivating creativity, schools have adopted this approach to deepen student learning beyond single-subject “silos.” Interdisciplinary instruction can be “an extremely effective approach, helping students develop multifaceted expertise and grasp the important role interrelationships can play in the real world” (Edutopia, 2008). Students develop critical thinking and creative capabilities by linking subject matter and learning.

International schools have followed the trend and are generally focused on interdisciplinary instruction. Most international schools fall into three distinct curricular categories: International Baccalaureate (IB), American, or British. Two of the three emphasize the value of interdisciplinary instruction. Elementary schools that offer the IB Primary Years Programme (PYP) use a “framework guided by six transdisciplinary themes of global significance” (“The IB Primary Years Programme,” 2015). The aim of the themes is to provide guidance to teachers to design investigations within each theme that connect to the larger world. As of September 2019, there were 5,175 schools in 157 countries offering an IB approach and aiming to design learning in which students are making interdisciplinary connections between subject areas.

International schools that align themselves with the American curriculum also value interdisciplinary learning. An examination of curriculum standards in Mathison and Freeman’s

1998 study “confirms the wide support given to the notion that furthering connections between disciplines is a viable pedagogical approach” (p. 6). This study included studies from the National Council of Teachers of Mathematics (NCTM) and the National Research Council. More recently, the Common Core State Standards (CCSS) and Next Generational Science Standards (NGSS) have re-emphasized the benefits of an interdisciplinary approach.

The British National Curriculum does not mention interdisciplinary connections at all, rather focusing on discrete skills for students to master at each year level. The last update to the curriculum in 2014 included changes such as introducing math concepts at an earlier age, a more chronological approach to history, and a shift towards hard facts in science. These changes impact international schools that follow the British curriculum, as they adhere to the national curriculum to prepare students for exams.

An interdisciplinary approach can develop creative thinking by focusing on conceptual understanding and strengthening one’s ability to transfer understandings to different contexts. In the next section, I will examine STEM education, a focused approach to interdisciplinary learning.

The STEM and STEAM Movement

Another example of an educational trend intended to address the 21st century learning skills is the STEM movement. The interdisciplinary nature of STEM allows students to gain a deeper knowledge of the content of a single discipline and naturally leads to more transfer across different subject areas. STEM education can foster creative thinking; however, many schools have not been successful beyond developing separate programs or lessons integrating the different disciplines.

In the 1990s the National Science Foundation (NSF) coined the acronym STEM, combining science, technology, engineering, and mathematics to describe various NSF initiatives and programs. Through implementation, the definition of STEM varies from a reference to the four disciplines to an integration of the four disciplines. In many schools there is more emphasis on science and math since they have traditionally been considered as part of the core curriculum by many countries and schools. Many researchers, such as Bybee, stress that STEM literacy allows schools to embed technology and engineering into their programs. In many international schools, STEM has been used as a rationale for buying technological equipment and devices. As Bybee (2013) explains, “STEM has political value for national and state policies, even if its meaning is not clear” (p. 2). He believes that while the term STEM influences the educational realm, it has not been valuable in designing school programs and recommending instructional practices. Bybee (2013) states, “STEM has potential for a significant innovation in education, one that could align with contemporary education standards and provide direction for crucial components of education reform” (p. 2).

Starting in 2012, educators in Massachusetts, New Mexico and Rhode Island started experimenting with adding another subject to STEM. There was a push for STEM to become STEAM, with the addition of “arts.” The argument was to add elements of design thinking and creativity for true innovation to occur. According to the Rhode Island School of Design, the STEAM movement's chief objectives were to “transform research policy to place art and design at the center of STEM” and “influence employers to hire artists and designers to drive innovation.” Educators were also campaigning for art and design to take a more central role in K-12 education. Support for STEAM claims that “when the arts are seen as an end goal, not just an entryway to presumably more important STEM topics, thoughtfully developed STEAM

curricula can truly engage sustained cross-disciplinary student learning” (Bequette & Bequette 2012, p. 43).

Whether STEM or STEAM, there is little clarity on how it should be implemented in classrooms. Teachers worldwide have worked to develop STEM and STEAM projects, lessons, and units. As described in the next section about Makerspaces, significant resources have been applied toward building STEM programs and STEM literacy in many schools.

Makerspaces

Many schools, particularly international schools, have developed dedicated makerspace areas on campus, spending precious fiscal resources on buying materials and hiring faculty to guide students to innovate in these spaces. According to Van Gompel (2019), “makerspaces are physical places where learners are encouraged to collaborate, create, and innovate by using a hands-on approach with technology and different mediums of the arts” (pp. 5-6). The Makerspace Playbook’s definition is less limited by a specific space. Still, it refers to a mindset: makerspaces are “physical spaces for people, including kids, to work together and review their projects. Making can happen anywhere—on a kitchen table or in a high-end Fab Lab, a living room or a garage, a school or a community center” (Hlubinka et al., 2013, p. 11).

Maker spaces have emerged as a prevalent response to the increasing demand for fostering creativity in international schools (Johnson et al., 2012). These innovative environments, such as the one implemented at the American School in Japan (Hirata, 2016), facilitate hands-on learning and interdisciplinary collaboration by providing access to various tools, materials, and technologies. In addition, institutions like the United World College in Southeast Asia (UWCSEA) have established dedicated maker spaces as a means of promoting student-driven projects and design thinking methodologies (Henderson, 2017). Consequently,

such spaces have become integral in nurturing students' creative capacities, equipping them with essential skills to navigate an increasingly complex and interconnected world (Dougherty, 2013). This common reaction to the need for creative thinking schools is a reason for my research and inclusion in this literature review.

The concept of makerspaces has grown worldwide and in various forms. There are no standard lists of equipment, activities, or designs for the spaces. Makerspaces can be compared to labs or studios and do not represent one type of space. There are examples of makerspaces worldwide housed in media centers, art studios, empty classrooms, or devoted areas in other learning spaces. There is an element of flexible design that allows for evolution and development as students make use of the space. For example, the Milwaukee Makerspace in Wisconsin has a range of tools, machines, and equipment for people to explore electronics, robotics, woodworking, embedded software, metalworking, music, art, video, photography, textiles, and printing. The middle school makerspace at Singapore American School offers two dedicated staff members, in the library space, where students and teachers “are designing, creating, building and making a little noise. The middle school makerspace has become a haven for students to come and learn how to fashion cigar box guitars, build bamboo bikes, paint figurines, and basically create anything they can think of!” (Aldous et al., 2017). The variations of makerspaces (Austin, 2017) can be found in Table 3.

While modern makerspaces offer tools such as 3D printers, robotics, and virtual and augmented reality tools, they are not limited to new technologies. When touring High Tech High in San Diego, California, the most widely used tool by students was the woodworking machines. Various activities can happen in a makerspace including sewing, welding, building, sculpting, wiring, painting, paper, and cardboard crafts (Hlubinka et al., 2013).

Table 3

Types of Makerspaces

Type	Description
Fab Lab	Fab Lab, short for "fabrication laboratory," is a space equipped with digital fabrication tools, equipment, and resources for individuals to create, innovate, and prototype their ideas. The Fab Lab concept originated at the Massachusetts Institute of Technology (MIT) in the Center for Bits and Atoms, under the direction of Professor Neil Gershenfeld (2005).
Hackerspace	A hackerspace, also known as a hacklab, is a community-driven workspace where individuals with common interests in technology, computers, science, digital art, and other creative domains can gather, collaborate, and share resources. Hackerspaces provide access to various tools, equipment, and knowledge to enable members to work on projects, learn new skills, and exchange ideas in a supportive environment (Troxler & Maxigas, 2014).
Library Makerspaces	Areas within a library provide patrons with access to tools, equipment, and resources for hands-on learning, creativity, and innovation. By incorporating makerspaces into their facilities, libraries aim to expand their traditional roles as repositories of knowledge to become active centers for learning, collaboration, and skill development (Kurti et al., 2014). Library makerspaces may house various technologies, such as 3D printers, laser cutters, CNC machines, electronics workstations, and crafting materials. These spaces may host workshops, classes, and community events, allowing library patrons to actively engage in the process of learning and creation.
School Makerspaces	A dedicated area within an educational institution that facilitates hands-on, experiential learning by providing students with access to tools, materials, and resources to create, innovate, and collaborate on projects. These spaces are designed to foster creativity, critical thinking, problem-solving, and interdisciplinary connections, aligning with the evolving needs of 21 st century education (Martinez & Stager, 2013). School makerspaces enable students to engage in a wide range of activities, from traditional arts and crafts to cutting-edge technologies.

Note. (Austin, 2017).

Schools that do not have space or resources to set up a makerspace often work with other organizations to provide opportunities for time in a makerspace. FabCafe, with 10 locations in 7 countries, offers makerspaces open to the public to create and connect. The Bangkok location is situated in a government subsidized facility called the Thailand Creative and Design Center, a coworking space designed for creative entrepreneurs in Bangkok. The FabCafe Bangkok works with local public schools and international schools that do not have a makerspace on their campus. By partnering with organizations, students can benefit from a makerspace.

Despite the vast differences in the offerings of makerspaces, the most successful share common features regarding type of work being done in the spaces. Makerspaces are areas where students come together to collaborate on projects, share tools and exchange ideas. In some schools, time in the makerspace is slotted into a regular timetable, while in others it is more responsive to the student's personal interest. As a separate stand-alone class, it can often be disconnected from other learning for students. A successful and effective model is one where teachers can collaborate to seamlessly connect learning outside of the makerspace with the work in the makerspace. In some schools where it is optional for students to visit the makerspace, this can lead to inequities in access.

Makerspaces are spaces where people can come to meet, socialize, and create. These spaces offer opportunities within the school to develop problem-solving and exploration skills and help to facilitate activities that involve creating. According to Dale Dougherty, founder of Maker Media, successful makerspaces should do the following: promote learning through playful exploration, integrate naturally with art and science, and offer materials and tools that equip them to create (Krueger, 2014). The intent of a makerspace is to create a place for students to experience skills firsthand. This connects to Dewey's suggestion about experiences leading to

true learning. However, the logistics and resourcing have been a challenge for many international schools. In the next section, I will detail another recent approach in elementary schools to foster creative thinking in students.

Design Thinking

Like Makerspaces, another example of a movement to embed creativity in schools is design thinking. Design thinking is a cognitive process and mindset traditionally practiced in engineering and design to solve complex problems. The design thinking process has been increasingly integrated into international schools as an effective pedagogical approach for fostering creativity, critical thinking, and problem-solving skills (Carroll et al., 2010). This human-centered methodology emphasizes empathy, experimentation, and iteration to address real-world challenges and promote interdisciplinary learning (IDEO, 2015a). Design thinking can also be used to find creative solutions for school improvement, accessing student voices and input to inform changes (Nash, 2019). Similar to PBL, the approach was adopted into education from another field.

In 2015, the San Francisco design company, IDEO published “Design Thinking for Educators” as a guide for helping K-12 educators conduct design thinking activities in their classrooms. Tim Brown (2008), CEO of IDEO describes design thinking as:

Unaffordable or unavailable health care, billions of people trying to live on just a few dollars a day, energy usage that outpaces the planets ability to support it, education systems that fail many students, companies whose traditional markets are disrupted by new technologies or demographic shifts. These problems all have people at their heart. They require a human-centered, creative, iterative and practical approach to finding the

best ideas and ultimate solutions. Design thinking is just such an approach to innovation.
(2015a, p. 92)

Stanford University developed design thinking organizations like the Hasso Plattner Institute of Design (d.school), REDlab, and the K-12 Lab Network. Proponents of design thinking believed that ill-defined problems exist in many disciplines and that design thinking can be applied to any situation to solve problems and innovate.

The design thinking process has been adapted for elementary school-aged children by simplifying the methodology, using age-appropriate language, and focusing on hands-on, collaborative, and engaging activities that cater to their developmental needs (Cook, et al., 2017). There are several models prevalent in elementary schools. The process must retain its core stages, such as empathy, defining, ideating, prototype, and testing, but emphasize accessible and relatable examples that resonate with younger learners (IDEO, 2015b). In 2016, Spencer and Juliani adapted the design thinking process into phases and terms suitable for K-12 students, as illustrated in the LAUNCH Cycle, shown in Figure 5. This design cycle asks students to consider themselves inventors and creators and use problem-solving, critical thinking and imagination to develop solutions to problems.

Nash (2019) utilizes a design method that draws inspiration from the widely known Stanford Design School approach, incorporating five phases: Empathy, Definition, Ideation, Prototyping, and Testing. However, he intentionally adapts his method to suit the specific context of schools and offers specific strategies for educators. In Nash's design thinking process, he introduces six phases: Kickoff, Need Finding, Synthesis, Brainstorming, Prototyping, and Implementation. The "Kickoff" phase guides educators on how to initiate design thinking to tackle school-related problems or innovation goals. It emphasizes the importance of framing the

design challenge and assembling a team to address it effectively. The “Need Finding” phase involves understanding the unmet needs of various stakeholders within the school. While empathy plays a role in this phase, Nash also introduces other strategies for uncovering these needs. Once data and information are gathered, they are integrated, examined, and analyzed in the “Synthesis” phase. Next, the “Brainstorming” phase encourages the design team to generate a range of possibilities and solutions based on the insights gained from the previous phases. The team then selects the most promising options to develop further. The “Prototyping” phase involves transforming these selected ideas into tangible design solutions, often through smaller and manageable implementations. Less involved prototyping enables rapid testing and iteration without committing significant resources to a single solution. Ultimately, the goal of the process is to reach the “Implementation” phase, where the chosen design solution is put into practice and tested.

As suggested by Nash and other design thinking experts, educators often introduce real-world challenges relevant to their immediate surroundings, like designing a better school playground or solving issues in their local community (Carroll et al., 2010). Many international schools draw on the seventeen Sustainable Development Goals (SDGs), adopted by all United Nations Member States in 2015, as a guide to define these problems.

In addition to simplifying the process, other methods have been used to support the use of design thinking in younger learners. Visual aids, storytelling, and role-playing can also help students grasp abstract concepts and develop empathy for the end-users (Razzouk & Shute, 2012). Collaboration and iterative learning are emphasized through group activities and discussions, allowing students to brainstorm ideas, provide feedback, and learn from their peers

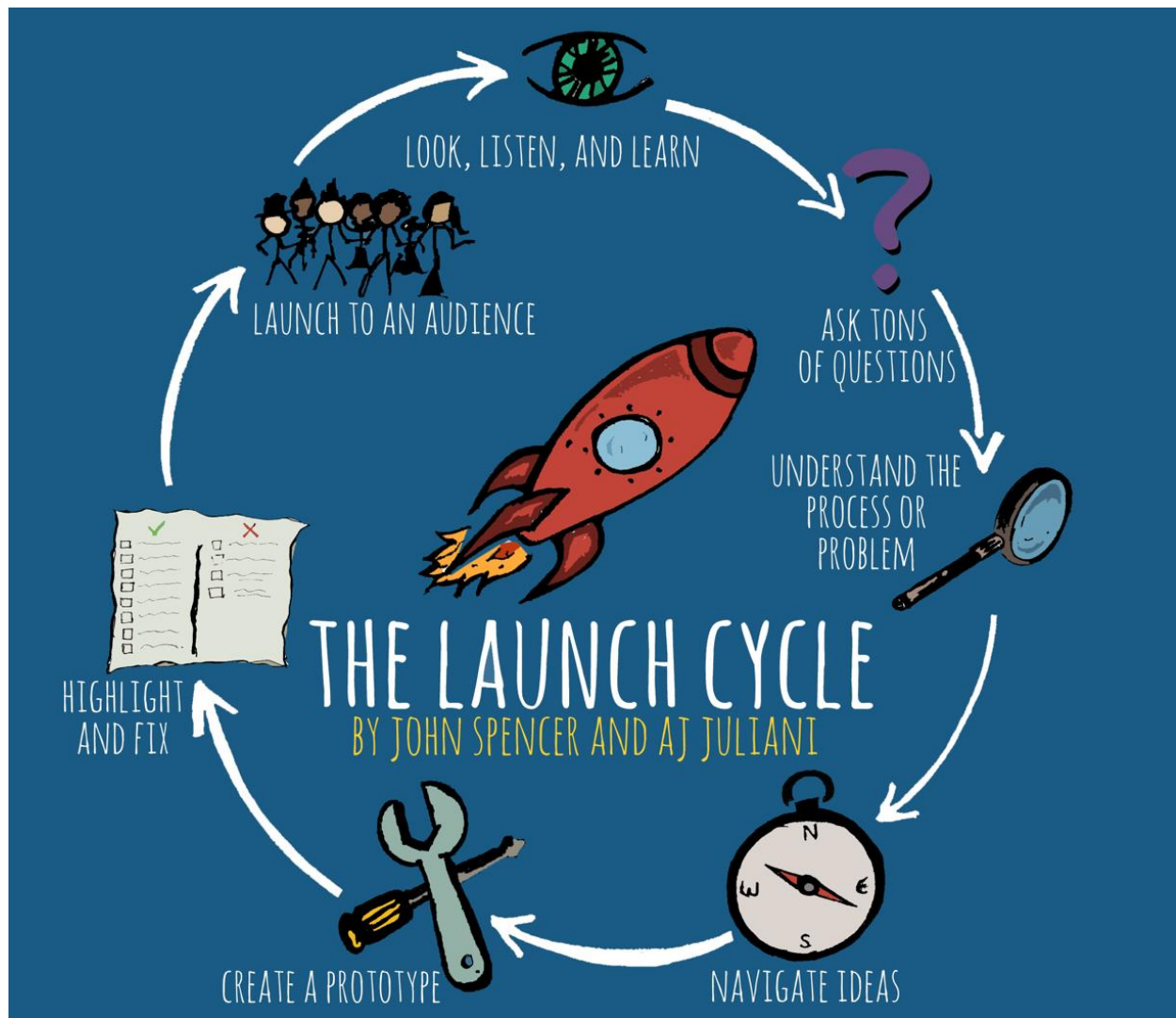


Figure 5. The LAUNCH Cycle.

(Scheer et al., 2012). When prototyping, elementary students are encouraged to use simple, age-appropriate materials, such as clay, cardboard, paper, or craft supplies, to bring their ideas to life.

At the American School of Bombay, the Design Tech curriculum has been implemented to guide students through the design thinking process, encouraging them to identify problems, empathize with end-users, prototype solutions, and refine their ideas based on feedback (Geary, 2016). Furthermore, international schools are increasingly incorporating design thinking principles into professional development programs for educators, empowering them to adopt innovative teaching strategies and foster student-centered learning environments (Kwek, 2017).

Design thinking is not only prevalent in international schools. As schools worldwide have realized the need for more creative thinking, other organizations have also developed programs to work with local schools. One example is the DesignSingapore Council. They work with six secondary schools in Singapore to pilot enrichment workshops in design thinking, where students design solutions to solve problems or needs in a community.

By adapting the design thinking process for younger learners, educators can nurture their creativity, critical thinking, and problem-solving skills, fostering a mindset of innovation and resilience from an early age.

Conclusion

This chapter presented an exploration of creativity as a subject, a review of studies linked to creativity, and described some programs in international schools. As AI and other advanced technologies advance, schools will be challenged to embrace these changes to enhance the acquisition of creative thinking skills in their students. This study explores a specific international school in its quest to foster creative thinking skills as it opens to students. The next

chapter describes my process as a researcher in better understanding the intricate nature of a start-up school.

CHAPTER 3: RESEARCH DESIGN

Number your paper from one to twenty for our weekly spelling test.
Classroom board

As I sat in an elementary school classroom in an international school, I couldn't help but notice how teachers taught students to recite facts and figures. Not only did I question the importance of memorizing, but I was struck by the absence of creativity. The experience prompted me to wonder about how international schools promote creativity among students. What challenges do schools face in fostering and developing creativity? As a result, I undertook a research project to explore the conditions that promote creativity in international elementary schools.

The exploration of creativity in educational settings has been an area of interest for many researchers and educators, as creative thinking is becoming increasingly critical for students to thrive in a rapidly changing world. This chapter focuses on the research design I used to explore the conditions that promote student creativity in international elementary schools. In this chapter, I describe the methods and procedures that inform the research questions; to do so, I investigated the perspectives and challenges of multiple stakeholders, including teachers, students, and school leaders. The aim of this research was to examine how a start-up school with creativity as its core mission develops and prepares leaders and teachers to foster creativity. I provide overview of the research design that includes the research questions, the participant selection, data collection and analysis procedures, ethical considerations, and study limitations. The overall aim of the research was to examine international elementary schools and the factors that contribute to promoting student creativity by closely examining one international school. The research responds to the overarching research question: "How does a start-up school, with creativity in its mission,

develop and prepare for creativity with leaders and teachers?" The sub-questions that guided the research include:

1. How does an international school conceive and design a creativity-focused school?
2. What factors promote or inhibit the integration of creativity in leadership, policies, curriculum design, and pedagogy in international elementary schools?
3. How do the design elements and efforts to address creativity at NOVUS International School compare with those of other international schools?
4. How does my involvement in this research transform my leadership practices?

In this chapter, I outline the design of the case study, including the methods and procedures employed to address the research questions. I provide an overview of qualitative research and its significance to this study. Then I describe the research process, including I collected and analyzed data from international school educators. Finally, I discuss ethical considerations and the limitations of the study.

Research Design

A case study is an in-depth examination of a particular phenomenon within a real-life context (Yin, 2018). In using a case study analysis, researchers investigate complex social phenomena in a natural setting, providing a deeper understanding of the issues under study (Stake, 1995). According to Creswell (2014), case studies are particularly useful when exploring topics that are difficult to examine using quantitative methods; the case study methodology includes a collection of rich, descriptive data that can provide insights into the social, cultural, and historical factors that may influence the phenomenon under study. Qualitative methods are “interpretive research; the inquirer is typically involved in sustained and intensive experience with the participants” (Creswell & Creswell, 2018, p. 183). Although qualitative research

processes are similar to quantitative research because the data collection and analysis methods require systematic practice: however, “qualitative methods rely on text and image data [and] have unique steps in data analysis” (Creswell & Creswell, 2018, p. 179), including the coding process (Saldaña, 2016). Most importantly for me because I live and work in a practice context, case studies offer practical insights that can be applied in real-world settings, making them an invaluable tool for practitioners (Baxter & Jack, 2008). The case study method typically employs multiple data sources, such as interviews, observations, and documents, to gain a holistic and nuanced understanding of the phenomenon under investigation (Creswell, 2014). The purpose and data sources specific to case studies was considered in the research design. Case studies are often chosen when studying complex, real-world situations where variables cannot be controlled, and a deep understanding of the context is essential (Baxter & Jack, 2008). Overall, the case study method offers a powerful means of investigating complex social phenomena, generating rich and nuanced data that can help to inform theory and practice.

I conducted the NOVUS case study between November 2019 and June 2020, consisting of two distinct phases, as illustrated in Table 4. I was a member of the Design Team. This case study employed qualitative research methods to gather data pertaining to teaching creativity within a particular international school. I crafted the research design to capture insights on how a school could structure its curriculum to foster the development of creative thinking abilities. The preliminary questionnaire to other international schools undertaking creativity helped to inform our journey.

In phase one of the study, I used a questionnaire to understand the landscape of creativity in international schools. The responses helped me understand the greater context of a case study and provided a broader understanding of the phenomenon under study. A case study is typically

Table 4

Overview of Study

Phase	Activities	Goals
Phase One – December 2019 to March 2020	• Questionnaire completed by international school educators • Analysis of the responses	• Gather data on perceptions of creativity and common components of schools with a focus on creativity • Draw conclusions and major findings
Phase Two – November 2019 to June 2020	• Interviews with NOVUS Learning Design Team members • Document review (marketing material, website) • Observations of NOVUS • Reflections from NOVUS • Follow up interviews with NOVUS team	• Gather data on perceptions of creativity and creative thinking • Determine obstacles to designing a school model with the intent to foster creativity • Capture reflections on leadership for creativity

conducted within a specific setting or context, and the details of that context are integral to understanding the findings of the study (Stake, 1995). The context can shape the phenomenon being studied, and understanding the broader context can help to explain the unique features of the case and their impact on the findings. Moreover, understanding the context can assist in generalizing the findings of the case study to other settings or populations (Creswell, 2014). By examining the context, researchers can identify potential confounding factors that may affect the interpretation of the results. In summary, understanding the greater context of a case study is critical to developing a deeper and more nuanced understanding, aimed to answer sub-questions two and three.

The second phase overlapped with phase one (November 2019-December 2020) as we started the design process in the fall of 2019. In this phase, I closely examined NOVUS International School, a school aimed directly at addressing the creative thinking skills of its students. NOVUS International School had a unique position as a startup school developed to re-engineer curriculum and offer programs that intentionally focus on developing future-ready students. As I was a member of the Design Team at NOVUS International School, I could develop a meaningful comprehension of the school and its context. The case study design supported me as a researcher to adapt their methods and research questions throughout the investigation and provided an opportunity to generate hypotheses and theories (Stake, 1995). The adaptive nature of case studies was particularly advantageous when the COVID-19 pandemic derailed original plans and required changes to the original research design.

Data Collection

Since case studies focus on a small number of cases, the validity of the findings must be strengthened by multiple data sources. Thus, I collected qualitative data using multiple sources in

the two phases of the research: questionnaire, phone surveys, artifact reviews, document reviews, and reflective memos. As Yin (2013) states, a researcher must “accept rather than avoid the necessary underlying assumption that the typical case study will only include a small number of cases” (p. 324-325), strongly suggesting that data is triangulated with multiple data points. Next, I explain the data collection methods for both case study phases.

Questionnaire

Solid survey practices are essential as they ensure the reliability and validity of the data collected. According to Dillman et al. (2014), survey design must clearly define the research objectives, target population, sampling techniques, question-wording, and response formats. I conducted a questionnaire to gain insight into the practices of international schools in fostering creativity among their students. I developed an anonymous questionnaire consisting of eight questions, which were designed to collect information about participants' definitions of creativity, how creativity is fostered in their schools and the challenges faced by educators in addressing creative thinking skills (see Appendix F). I utilized the Qualtrics platform to design and distribute the questionnaire. After pretesting the questionnaire to identify and correct potential errors, I sent the link directly to over forty educators. In addition, I the questionnaire to international school educators through international school databases, educational consultants, and social media platforms. The intention was to gather diverse participants regarding their location, school context, and roles within education. I sent follow-up reminders via email to increase response rates. The questionnaire was open from December 2019 to March 2020, and participants could provide open-ended responses. Participants had the choice to identify their school and themselves. In my record keeping, I created pseudonyms to protect the identity of the respondents. From educators that I personally contacted, the response rate was 42%.

After responses were collected, I analyzed the data using appropriate statistical techniques to draw valid conclusions. A detailed analysis of the findings can be found in Chapter 4. By adhering to best practices, I ensured that the questionnaire would yield accurate and reliable data, enhancing the credibility and generalizability of my findings.

Document Review

Document review practices were essential when collecting data as they ensured that the data are accurate, relevant, and appropriate for the research objectives. According to Creswell and Creswell (2018), document review involves the systematic examination of written materials to identify relevant data that can be used to address research questions. I selected the appropriate documents and I analyze the relevant data from the documents using content analysis to identify patterns and themes. Additionally, I assessed the data quality by considering the source's reliability and validity, the information's accuracy, and any potential biases. By adhering to these best practices, researchers can ensure that their document review process is rigorous and produces reliable and valid data that can be used to answer research questions.

To contribute to an understanding of international schools, I accessed public information from school websites and any documents shared with me by the participants. Specifically, to better understand the international landscape and NOVUS International School, I reviewed public documentation from schools about their curriculum, mission and vision, school initiatives, learning principles, and student profiles. In addition, I collected and analyzed public documents created during the school opening planning process, including brochures, marketing videos, curriculum guidelines, and parent resources. The approval for participation in the study from NOVUS can be found in Appendix D. In Chapter 6, I provide thorough analysis of NOVUS data.

Artifact Review

Artifact review differs from document review in that artifacts are physical objects or materials that I collected and analyzed as an ongoing data that are not public, but internal to the team and necessary to the study. According to Creswell and Creswell (2018), artifacts can include meeting notes, photographs, artwork, video recordings, and other materials that can provide information relevant to the research questions. Like document review practices, the process of artifact review involved selecting the appropriate artifacts and using a codebook to analyze relevant data from the artifacts. I used a common codebook (see Appendix E) to identify patterns and themes for all data. I determined the reliability and validity of the sources through an analysis of the accuracy of the information, and I considered any potential biases.

Interviews

Interview practices are critical when collecting data because they researchers can gather rich and detailed information about the research topic. Interviews were a crucial tool for data collection to inform the research questions. To develop a clear understanding of NOVUS for the case study, the interviews helped me to understand the micro, meso and macro assets and challenges within the school with regard to fostering creative skills in students. According to Rubin and Rubin (2012), effective interviews require careful planning and preparation, including selecting appropriate participants, developing a set of open-ended questions, and creating a comfortable and safe environment for the interview (see Appendix G). Before the interview, I obtained informed consent from participants, which explained the nature of the study, the data collected, and how the data was used and stored (see Appendix D).

During the interview, I actively listened to the participant, asked follow-up questions to clarify responses, and encouraged the participant to provide detailed and specific information. In

Table 5, I lists the participants interviewed; I provide additional biographical information in Chapter 4.

After the interviews, I transcribed the data and reviewed for accuracy and completeness; then I analyzed using appropriate techniques such as thematic analysis. I retained all raw data, allowing me to return the source for clarification during the coding process. I used the same codebook for analysis. By following these best practices, I conducted interviews that yielded data that enhanced the validity and reliability of the research findings.

Phone Interviews

I conducted three online phone interviews with willing participants from three different international schools as a follow-up to the questionnaire (see Table 6). Identities of surveyed educators are confidential. Like the questionnaire, in the phone interviews, I identified perceptions and common barriers in international schools and determine schools to approach for addressing creativity. I recorded, transcribed, coded, and analyzed the conversations utilizing the same process as interviews.

Reflective Memos and Field Notes

Reflective memos and field notes contain comments, initial thoughts, and insights throughout the process of examining creativity in international schools. As Yin (2013) describes the complexity of validating case study findings, he states, "one evaluative approach has been to conduct and document direct observations of the events and actions as they actually occur in a local setting as a critical part of a case study's data collection" (p. 322). The memos were open-ended and capture some details that may otherwise be missed. I reflected on personal thoughts about topics related to the research questions, including my leadership skills.

Table 5

List of Participants from NOVUS International School

Pseudonym	Role at NOVUS
Canberra	Founding Head of School
Katella	Lower Loop Leader
Pacifica	HUB Director
Newland	Early Years Cohort Leader
Monitor	Cohort 1-2 Leader
Adams	Middle Loop Cohort Leader
Magnolia	Project Designer

Table 6

List of Participants from Other Schools

Pseudonym	Role
Atlanta	Assistant Elementary Principal at a large international school in Kuala Lumpur, Malaysia
Juniper	Head of School at a medium-sized international school in Hong Kong
Edison	International consultant

Saldaña (2016) describes memos as the process of documenting “reflections on: your coding processes and code choices; how the process of inquiry is taking shape; and the emergent patterns, categories and sub-categories, themes, and concepts in your data – all possibly leading toward theory” (p. 44). In the reflective memos about the NOVUS journey, I captured the challenges we navigated as the team during the design and planning process. Memos served as a tool to triangulate data and document the data analysis process.

Another purpose of the memos was to establish connections between myself and the data. My role as an educator in an international school affected my positionality with regard to other international schools. Thus, I had to maintain a critical view of my biases through reflection. As Creswell and Creswell (2018) state, “inquirers explicitly identify reflexively their biases, values, and personal background, such as gender, history, culture, and socioeconomic status that shape their interpretations formed during a study” (p. 183). My previous experiences in the international school context were considered with my closer examination of data.

Data Analysis

In this section, I describe the data analysis conducted to answer the study’s research questions (see Table 7 to outline the data sources for each sub-question.) As described by Creswell and Creswell (2018), I analyzed data inductively by “building patterns, categories, and themes from the bottom up by organizing the data into increasingly more abstract units of information” (p. 181). I organized the data initially through codes, “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldaña, 2016, p. 4). Saldaña (2016) provides an overview of different types of coding, including open coding, axial coding, and selective coding.

Table 7

Data Sources for Sub-Questions

How does a new start-up school, with creativity in its mission, develop and prepare for creativity with leaders and teachers?

Research Sub-Question	Data Sources	Triangulated With...
How does a new international school conceive and design a creativity-focused school?	Phase 1 – Worldwide Focus Questionnaire Document Review Phone Survey Phase 2 – NOVUS Focus Interviews Artifact Review Document Review	Reflective Memos
What factors promote or inhibit the integration of creativity in leadership, policies, curriculum design, and pedagogy in international elementary schools?	Phase 1 – Worldwide Focus Questionnaire Document Review Phone Survey Phase 2 – NOVUS Focus Interviews Artifact Review Document Review	Reflective Memos
How do the design elements and efforts to address creativity at NOVUS International School compare with those of other international schools?	Phase 2 – NOVUS Focus Interviews Artifact Review Document Review	Reflective Memos
How does my involvement in this research transform my leadership practice?	Interviews Artifact Review Document Review	Reflective Memos

In Phase One, I focused on providing an international context for addressing creativity in schools, and the International School Creativity Questionnaire was the main source of evidence. Descriptive statistics refer to a set of statistical techniques I used to summarize and describe the main features of a dataset to summarize and interpret data collected from the questionnaire. According to Gravetter and Wallnau (2014), descriptive statistics are used to describe a dataset's central tendency, variability, and shape by analyzing and presenting data in an understandable and meaningful way, which I described in detail in Chapter 4. Descriptive statistics can describe various characteristics of a dataset, such as measures of central tendency, variability, and data distribution. I used these statistics to identify patterns and trends in the data, providing insight into the nature of the data and helping researchers draw meaningful conclusions and informing my interpretation of the findings.

I selected the questionnaire results, NOVUS interviews, and NOVUS marketing materials to code first through open coding. I identified and labeled different concepts or ideas that emerged from the data without any predetermined categories or themes. As careful considerations of each piece of data was time-consuming, I intentionally selected the most relevant pieces of evidence to open code. Saldaña (2016) emphasizes the importance of open coding as the first step in analyzing qualitative data. He describes open coding as the "ground-zero" of qualitative data analysis, where the researcher reads through the data, line by line, to identify concepts and ideas that emerge from the data. As new codes emerged, I defined each one in the context of my study to allow for future coding of the same idea. Appendix E is an excerpt from my code book. Saldaña (2016) suggests that open coding is a creative and iterative process that involves constantly revising and refining codes as the researcher gains a deeper understanding of the data. Codes and definitions were adjusted as more evidence was coded.

Saldaña (2016) discusses the importance of axial coding, which involves organizing open codes into larger categories and subcategories, the second phase of data analysis. According to Saldaña, axial coding helps researchers make connections between codes and identify overarching themes that emerge from the data. As I coded more evidence, categories for the codes began to emerge. As I defined categories, I adjusted the code definitions within the context of the category. Defining codes helped me organize and connect themes in a structured manner to strengthen my understanding of the relationships between categories. Saldaña suggests that axial coding is a crucial step in the analysis process as it helps to structure and organize the data into meaningful patterns. When codes that emerged that did not fit a category, I continued to code and remained mindful that axial coding may limit the emergence of new themes that do not fit into the pre-existing categories.

After categories and themes emerged, I coded additional documents and artifacts using selective coding. Selective coding involves identifying and prioritizing the data's most significant categories and themes and exploring them in greater depth. Saldaña (2016) discusses the role of selective coding, which involves focusing on the most important themes and concepts that emerge from the data. Selective coding allows researchers to focus on the most significant themes and ideas, providing a more in-depth understanding of the research question. Overall, Saldaña (2016) advocates for a flexible and iterative approach to coding in qualitative data analysis, where the researcher is open to new ideas and revises their coding as they gain a deeper understanding of the data.

Confidentiality and Ethical Considerations

Maintaining confidentiality is crucial in a dissertation to protect participants' privacy and anonymity and ensure the research's integrity. Failure to maintain confidentiality can lead to

legal and ethical issues, such as breach of privacy and loss of trust from participants. By maintaining confidentiality, I can ensure that my research was conducted ethically and in compliance with ethical standards. I obtained informed consent from participants, explaining the nature of the study, the data collected, and how the data will be used and stored (see Appendix D). I also obtained permission from NOVUS International School from the Head of School (see Appendix C). Interview recordings, transcripts, memos, and artifacts were stored digitally in a secure cloud that only I could access. I recorded and stored interview and other raw data a secure cloud-based service. Protecting the data collected for a dissertation was crucial to ensure the confidentiality and privacy of the participants and the integrity of the research. Identifying information such as names or personal identifiers was removed from the data to protect the participants' privacy. Each participant was assigned a pseudonym; this list was password-protected on my personal computer. No one else had access to this information. The data will be destroyed six months after the completion of the dissertation. In adding security measures, I protected the data collected and ensured that it is used only for its intended purpose.

Ethical considerations must be considered when conducting a case study dissertation at the researcher's place of employment. My role as a member of the organization was carefully examined as I conducted the research. One primary concern was the potential for conflicts of interest, as I did not want my pre-existing relationships with the participants or my position within the organization to influence the findings. To mitigate these concerns, I established clear boundaries with the participants as I maintained a role as participant observer; thus, I gained much of my knowledge through firsthand experience and could explore “intersections between research and practice that might otherwise remain tacit and inaccessible to a broader audience”

(Kennedy-Lewis, 2012, p. 107). Throughout the study I adhered to ethical standards and ensured that I conducted with integrity and respect for the rights and welfare of the participants.

Limitations

Case studies are a useful qualitative research method that provides detailed insights into a particular context or phenomenon. However, the limitations to the case study approach include the potential for researcher bias and subjectivity in data collection and analysis. According to Flyvbjerg (2006), researchers may be influenced by their pre-existing assumptions and beliefs when selecting cases or interpreting data. Another limitation of case studies is the limited generalizability of findings. Because case studies are context-specific and involve small sample sizes, generalizing the results to other contexts or populations; however, in transferring the process to similar contexts, the process and the results may be useful to other international schools (Lincoln & Guba, 1981; Merriman & Tidswell, 2016). As to internal validity of the study, the usefulness to the specific context and the participants was critical in our development as a team (Hale, 2008). These are particularly important considerations as international schools vary greatly depending on the size, curriculum, location and mission. Additionally, case studies are often time-consuming and require significant resources, which may limit their feasibility in certain research contexts. Despite these limitations, case studies can be valuable when used appropriately, particularly in exploring complex or unique phenomena (Stake, 2006; Yin, 2018).

Conclusion

This chapter detailed the research design and methodology used to investigate the research questions through a case study of one international school. The two distinct phases of the study facilitated the collection and analysis of data to uncover emergent themes about creativity in international schools. Chapter 4 presents the findings from Phase One and provides

an overview of how international schools address creativity. Chapter 5 provides a detailed account of the background of NOVUS International School. The case study will continue in Chapter 6, where the major themes that emerged from the data are analyzed in depth.

CHAPTER 4: QUESTIONNAIRE FINDINGS

The whole is greater than the sum of its parts.

Aristotle

The quote by Aristotle highlights the importance of understanding the big picture to gain a deeper understanding of a concept or situation. By looking at the larger context or system, we can better appreciate the relationships and interactions between different components and gain a more comprehensive understanding of the topic. The quote served as a reminder to consider the broader context and to look beyond individual pieces of information to gain a deeper understanding of the topic.

The primary focus of this chapter is to present the data from phase one of the study. The aim was to investigate how international schools take the deliberate actions to cultivate creativity among their elementary students. Specifically, in this phase, I sought to understand how international school leaders and teachers foster creativity, including the definitions that educators and schools use to define creativity and the challenges the schools face in integrating creativity into their curricula and pedagogies. Given that the core case study was of one school prioritizing creativity, I developed the *International School Creativity Questionnaire* to collect data from other international educators to understand the landscape of creativity in international schools. In this chapter, I describe the questionnaire and results from the data analysis.

International School Creativity Questionnaire

Through engaging with studies about creative thinking skills in international schools, I found that the impetus to focus on creativity in schools is apparent, but we need to further understand creativity in international school settings. In my research, I found that only a few countries with significant government support to infuse creativity in schools. With the impact of

the global COVID-19 pandemic, there is evidence of this change. For example, the Singapore Ministry of Education has started to focus on initiatives highlighting the need for creativity in schools starting at a young age. Previously focused on strong academic programs, this shift is significant. As a result, the design thinking process has been incorporated into the Singapore national curriculum. As government educational policies are less responsive to change, corporations and education reform organizations such as KnowledgeWorks have stepped up to support these efforts. On February 6, 2023, the LEGO Foundation awarded the Center for Universal Education (CUE) in the Global Economy and Development program \$24 million USD to support school reform in historically underrepresented schools. The Adobe Creative Campus program is another example of an organization making a play for creativity in schools. The program aims to empower educators to incorporate creativity in their teaching and encourage students to develop creative skills. The program offers resources such as free access to Adobe Creative Cloud, professional development opportunities for educators, and a community of educators who share best practices for integrating creativity into the classroom. By partnering with universities and schools worldwide, the Adobe Creative Campus program aims to equip students with the creative skills they need to succeed in the digital age.

In Phase One, I investigated the current landscape of creativity in international school settings by using a short questionnaire designed to elicit information on how creativity is perceived and implemented. Thus, I present the details of the questionnaire design and the distribution process. Subsequently, I describe the data analysis process, outlining the approach taken to extract and interpret key insights from the responses collected.

Questionnaire Design and Dissemination

The purpose of the anonymous questionnaire was to gain insights into the approaches of

other educators and schools in fostering creativity in their students. I designed the questionnaire to collect information on how creativity is defined and cultivated in their respective contexts (see Appendix F). The questions covered a range of topics, including personal definitions of creativity, school ratings on fostering creativity, methods employed to foster creativity, the existence of a schoolwide definition of creativity, the appearance of creativity in guiding statements, challenges faced in developing creative thinking skills, identification of innovative international schools that foster creativity, and willingness to provide contact information for future follow-up. The questions were intended to facilitate the collection of relevant data to address the sub-questions of my dissertation. For example, one question asked for a scaled response; other questions were open-ended to elicit thoughtful responses from participants.

The questionnaire aimed to gather information from international school educators worldwide, representing diverse roles within the field of education, including school leaders and classroom teachers. I curated list of potential respondents through a three-pronged approach. Firstly, I utilized an international school database to identify schools. Secondly, I contacted educational consultants to connect with educators with expertise in fostering creativity in students or affiliated with schools known for emphasizing creativity. Notably, I contacted educators from Harbour International School in Hong Kong, International School of Kuala Lumpur in Malaysia, and International School Ho Chi Minh City in Vietnam as they were reputed for their focus on creativity. Thirdly, I identified educators within my professional network. Lastly, I shared the questionnaire on social media platforms that have established groups for international school educators, including Twitter, LinkedIn, and the International School Educators group on Facebook. I posted the link to the questionnaire on each platform four times in different time zones to attract different responses. My multi-faceted approach was

intended to generate a diverse sample of participants and to ensure comprehensive coverage of international school educators.

To obtain a range of perspectives and experiences, I used a purposive sampling approach (Patton, 2015) and I made direct contact with twenty-six educators to participate in the anonymous survey. Selection criteria included current employment in education and prior experience working in multiple international schools. To ensure diversity in the sample, I identified educators located in different regions and school contexts, with representation from various roles in schools, including a literacy consultant, a Technology Integration Coach, Elementary School Principals, and classroom teachers. The questionnaire was available for completion by participants from December 2019 to March 2020, allowing sufficient time for data collection. The sampling strategy was intended to generate rich and comprehensive data to address the research questions in the study. Seventeen educators responded. However, I could not ascertain a response rate as the distribution of the questionnaire link through social media platforms and the direct email invitations sent to the initial sample. Table 8 presents an overview of the demographic characteristics of the respondents. I conducted three interviews with three international educators after the questionnaire response.

Data Analysis Process of Questionnaire Responses

I summarized the questionnaire responses using simple descriptive statistics, providing a snapshot of the sample population's attitudes and opinions on creativity in international schools. For the question that asked respondents to rate their school, I computed measures of general to provide an overview of the data and used an open coding process to analyze the open-ended responses, as detailed in Chapter 3. I inductively coded the data by assigning topical codes to each response and used a master spreadsheet to track the codes and their frequency. After the

Table 8

International School Educator Questionnaire Respondents

Subject	Gender	Position	School	Location
1	F	Classroom Teacher		
2	F	Classroom Teacher	Vienna International School	Vienna, Austria
3	M	Classroom Teacher	Vienna International School	Vienna, Austria
4	M	Head of School	Nishimachi International School	Tokyo, Japan
5	F	Middle School Principal	Nishimachi International School	Tokyo, Japan
6	F	PYP Coordinator	Not provided	Budapest, Hungary
7	F	Middle School Principal/Head of School	UWC Singapore, East Campus	Singapore
8	F	Elementary School Principal	Cairo American College	Cairo, Egypt
9	F	High School Principal	American Community School in Abu Dhabi	Abu Dhabi, UAE
10	F	Head of School	Vientiane International School	Vientiane, Laos
11	M	Consultant	Based in the US	US
12	M	Head of Technology Integration	Not provided	
13	F	Director of Learning	Nishimachi International School	Tokyo, Japan
14	F	Classroom Teacher	Not provided	Tivat, Montenegro
15	F	Classroom Teacher	Not provided	Porto Alegre, Brazil

Table 8 (continued)

Subject	Gender	Position	School	Location
16	F	Classroom Teacher	Brussels International School	Brussels, Belgium
17	F	Assistant Elementary Principal	International School of Kuala Lumpur	Kuala Lumpur, Malaysia

initial coding process, in a second round of axial coding, I grouped emerging codes into categories. As patterns and themes emerged, I referred to the literature review from Chapter 2 to guide the coding and analysis. Three main areas emerged: personal and school definitions of creativity, conditions for fostering creativity, and challenges schools and educators face in fostering creativity. Given the elusive nature of the concept of creativity, I wanted to examine the diversity in the definition among the questionnaire participants and their schools. Additionally, I explored the necessary conditions for fostering creativity and identified common challenges that schools and educators face in promoting creativity.

International School Creativity Questionnaire Findings

In this section, I present the results related to the definition of creativity and the conditions identified by educators for promoting creativity in international schools. I begin by examining personal definitions of creativity, including participants' perspectives on what constitutes creativity, including aspects of novelty, innovation, creativity as a process, related skills, and personal quality or mindset. Furthermore, I explore schoolwide definitions of creativity and how they align with personal definitions. Next, I focus on the conditions educators identified as necessary for promoting creativity in international schools, including creating a student-driven environment, designing a creative curriculum, providing an appropriate learning environment, developing relevant content, offering adequate resources, using appropriate assessment methods, and utilizing effective pedagogy. The results from this section provide insights into how international schools can define and promote creativity effectively to foster the development of creative individuals who are equipped to succeed in a rapidly changing world.

Defining Creativity

The questionnaire included questions to elicit personal and schoolwide definitions of creativity, and to gather details about the practices and collective efforts of international schools in addressing creativity. As stated earlier in this chapter, the primary objective of the questionnaire was to identify common themes related to creativity in international schools to gain a comprehensive understanding of the efforts being made at NOVUS International School. First, I asked respondents to rate their respective schools on a scale of one to five in terms of the ability to foster creativity. All seventeen respondents gave ratings between two and four, with none of them rating their school either low or high (as illustrated in Figure 6). The mean score of 2.9 suggests that while schools were promoting creativity, educators did not believe that their schools were particularly effective in doing so. This trend is evident in other questionnaire data. These results indicate that while creativity is valued at all the schools represented, the respondents needed more confidence in the implementation (see Table 6).

Several respondents in the study shared their observations on shifting trends in international schools. For instance, one respondent stated, “I think creativity is one of the things that many schools aspire to foster in their students but many face the challenge of getting there. It needs to be a part of school culture and not just a buzzword” (personal communication, March 2020). Like their counterparts in the United States, international schools are subjected to initiatives driven by changes in national policies, accreditation requirements, and external trends in education. There is pressure to evolve and adapt in order to maintain enrollment and directly compete with other schools in the same region. However, some respondents expressed more assertive opinions regarding the lack of focus on creativity and the negative impact of the current structure of schools on student creativity. One respondent stated, “Schools need to stop educating

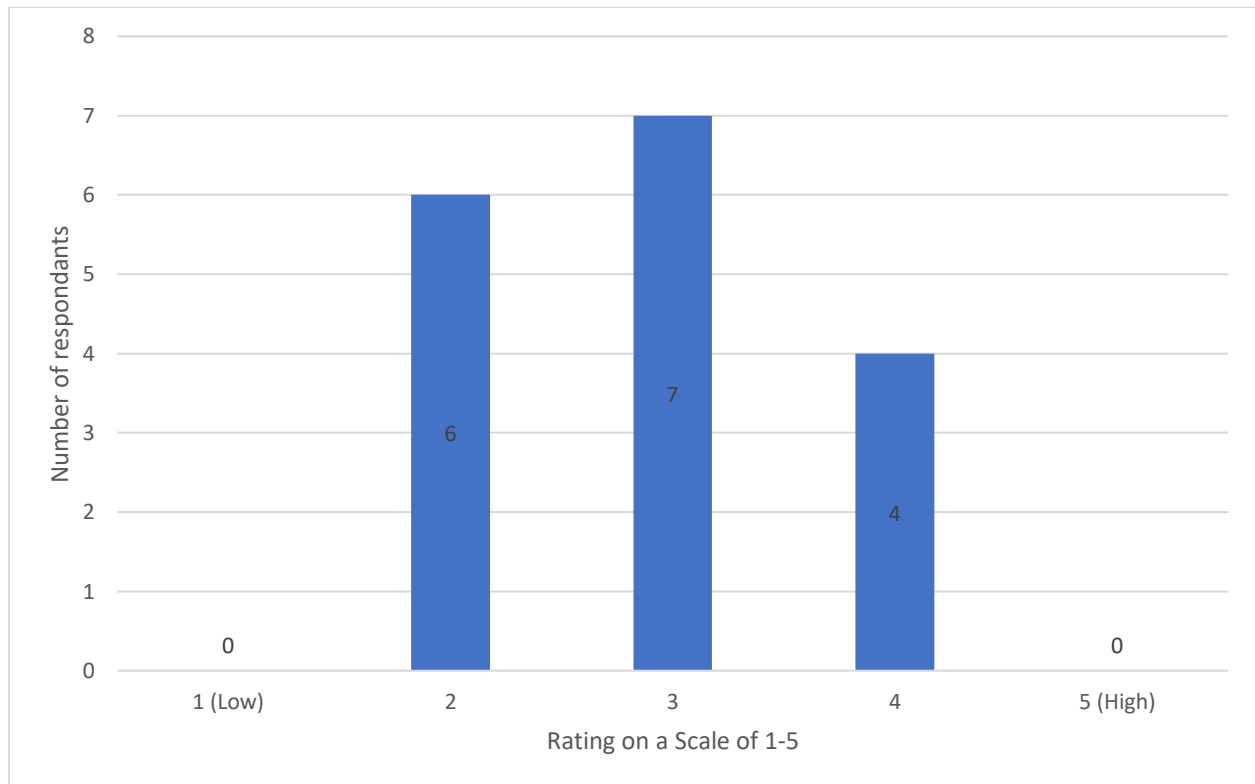


Figure 6. Respondents' rating of how creativity is fostered in their school.

creativity out of kids. Everyone knows, but few care” (personal communication, March 2020).

The questionnaire and subsequent interviews contradict the notion that there is a lack of interest in addressing creativity. However, the findings indicate that international school educators and schools have yet to develop a successful and effective model for fostering creativity.

Personal Definitions of Creativity

As the research in Chapter 2 indicates, people define creativity in numerous ways. The analysis of the educators’ definition of creativity generated five categories: (1) novelty, (2) innovation, (3) creativity as a process, (4) a combination of related skills, and (5) personal quality or mindset (see Table 9 lists the codes that provided evidence for each category).

Novelty. In analyzing responses to the questionnaire, the most prevalent codes associated with creativity centered on the concept of novelty. Novelty refers to the ability to generate unique ideas or approach problems and challenges from a different perspective. The responses identified ten instances of originality and novelty, making it the most frequently used term. The colloquial phrase "thinking outside the box" is often employed as a simplified way of describing the complex concept of creativity. One respondent offered a nuanced perspective on creativity, stating:

Creativity is more than “thinking outside the box.” It's actually not seeing or recognizing that a box exists, never being constrained by what is normal or what is usually done.

Being creative is putting together the ordinary pieces of life in ways that are essentially free and producing something greater than would be produced if the constraints remain.

(personal communication, March 2020)

The above response highlights the importance of adopting a different perspective or approach and creatively recombining existing ideas to create something new and novel. Another response

Table 9

Personal Definitions of Creativity from Questionnaire

Categories	Frequency of Codes
Novelty	Original – 10 Unconventional – 3 Building on existing ideas – 3 Different perspective – 3 Alternative possibility – 1 “thinking outside of the box” – 1
Innovation	Creating or producing something – 4 Adding value – 2 Innovation – 2 Production of something greater – 1 Imagination – 1 Change – 1
Creativity as a process	Ideation – 3 Process – 2 Without constraints – 1 Idea iteration – 1 Freedom of expression – 1 Exploration – 1 Concrete knowledge + imagination – 1
Related Skills	Problem solving – 7 Critical thinking – 1 “utilizing dormant skills” - 1
Personal Quality or Mindset	Perseverance – 2 Disposition – 1 Positive – 1 Inventive – 1

that addressed creativity: “Not being penned in by the way other people have approached something” (personal communication, March 2020). These responses raise questions regarding the necessity of novelty and originality in defining creativity, and whether the category itself may serve to limit creativity by defining it in terms of something worthy of being considered novel.

Innovation. A second category centered on innovation focused on the product produced through creative thinking and the ability to bring new ideas to life and make a positive impact. Innovation is a significant aspect of creativity, highlighting the importance of creating something tangible from the creative process. Some responses indicated that creative ideas required moving from the abstract to the concrete, as in this participant’s response: “The urge or drive to create something outside oneself, thus putting something new into being” (personal communication, March 2020). Other examples include: “using imagination to build something new (e.g., preschool children role playing in the kitchen area); finding an original idea as a thesis for an essay; iterating on an old idea in a new way to solve a problem” (personal communication, March 2020). Many definitions of creativity emphasize the need for creativity to result in a product or a change instead of just generating ideas for their own sake, as I discovered in my research for Chapter 2. This view is reflected in educational theories, such as the Transformative Model of Creativity, which suggests that creativity involves the transformation of ideas into actual products or outcomes. The Transformative Model of Creativity highlights the importance of moving from ideation to implementation and emphasizes that creative thinking must lead to action and impact (Sternberg, 2010). Another educational framework, the Action-Oriented Model of Creativity, similarly emphasizes the need for creativity to result in action and tangible

outcomes. In conclusion, the theme of innovation in the responses highlights the importance of creativity as a means to bring new ideas to life and positively impact the world.

Creativity as a Process. Within the respondents' personal definitions, another category described the process leading to innovation. This category included codes such as “ideation” or “process.” Creativity is frequently viewed as a process rather than a single event or outcome and comprises several stages, including ideation, exploration, and implementation. Ideation pertains to generating ideas and concepts, which may involve brainstorming, research, and other idea-generation techniques. The ideation stage was identified as the most common code within this theme. On the other hand, exploration involves developing and refining these ideas, often through iteration and experimentation. While implementation is the final stage in which the creative idea is brought to life and made into a tangible product or outcome, that term was not mentioned as part of the creative process in the responses.

Related Skills. The creative process typically entails the application of technical, critical thinking, and problem-solving skills. Hence, unsurprisingly, the code "problem-solving skills" was the second most frequently cited in the questionnaire. Many international schools and school reform initiatives, developed by various organizations, educators, and experts in response to the rapidly changing demands of the modern world, have prioritized 21st century skills, including critical thinking and problem-solving. Developing "21st century skills" has been emphasized in education as essential for preparing students for future challenges and equipping them with the necessary tools to thrive in an ever-evolving world. The current focus on 21st century skills in school reform may have influenced the respondents' views. Additionally, the frequency of responses related to the skills theme could be attributable to the educators' focus on explicitly teaching skills in their planning and work with students.

Personal Quality or Mindset. The analysis of the personal definitions of creativity found that the least frequent response categorized creativity as a disposition, referring to a personal quality or mindset. The codes related to this category were "perseverance," "positive," and "inventive." An example of a response that describes a personal quality or mindset is "Creativity is combining the dispositions of problem-solving, critical thinking, and ideation to generate new ideas and solutions" (personal communication, March 2020).

In analyzing the personal definitions of creativity provided, five categories emerged from the evidence: (1) novelty, (2) innovation, (3) creativity as a process, (4) a combination of related skills, and (5) a personal quality or mindset. The personal definition of creativity can significantly influence its implementation on a schoolwide or classroom level. For instance, a school that defines creativity as a process may allocate resources towards adopting a schoolwide design-thinking initiative or creating curricular objectives that provide more opportunities for project-based learning. Next, I explore how international schools define creativity.

Schoolwide Definitions of Creativity

However, while personal definitions influence the school, efforts for change occur on an organizational level with a shared mission, and I wanted to determine whether schools had a common definition of creativity. Out of the 17 responses, 12 educators indicated that their school did not have a schoolwide definition. One respondent mentioned participating in an activity in which students and teachers shared their definitions and found that they were all different. Research on organizational theory stresses the importance of a shared vision or mission for effective school reform. When I analyze the schoolwide definitions, I observed similarities and differences themes as in the personal definitions (see Table 10) as novelty and less emphasis on process and more references to mindsets and skills.

Table 10

Schoolwide Definitions of Creativity from Questionnaire

Categories	Frequency of Codes
Personal Quality or Mindset	Value diversity – 2 Responsible – 1 Love of learning – 1 Lifelong learners – 1 Initiative – 1 Independent – 1 Curiosity – 1
Skills	Collaboration – 1 Communication – 1 Creative thinking skills – 1 Critical thinking skills – 1 Multiple languages – 1 Multiple perspectives – 1

Personal Quality or Mindset. Codes related to creativity as a personal quality or mindset appeared least frequently in the personal definitions provided by the respondents. However, in schoolwide definitions, this theme emerged the most often. Notably, the codes can be interpreted in multiple ways, and the connection to creativity is not explicit. Furthermore, the school may have identified creativity in their shared values or learner outcomes for reasons other than highlighting its significance or due to the curriculum model the school has adopted. One response noted that "IB (International Baccalaureate) schools have a reputation for placing emphasis on the importance of creative thinking skills" (personal communication, March 2020). Roughly a third of established international schools are IB World schools, which must adopt the IB Learner Profile (see Figure 7) and develop a common set of ten attributes in their students. The IB Learner Profile explicitly references curiosity, creativity, and other skills necessary to undergo a creative process or produce a creative product. However, the same respondent commented that "in reality, these schools vary as much as any other type of school. I can think of examples of schools that are being innovative in other areas, such as the programs they offer, or the population they cater to. But I can't think of any examples where the focus/expertise is on developing creativity" (personal communication, March 2020).

Common values are found in most international schools. For example, the IB Learner Profile requires a common set of values to meet accreditation criteria. Other accreditation agencies, like WASC and CIS, require schools to identify common attributes, embed them in all aspects of the school, and regularly assess implementation. As of September 2021, over 160 WASC-accredited international schools and 1,000 CIS member schools in different parts of the world have these values and represented on their school report cards. These dispositions are displayed in the school, used in marketing materials, and included in official documentation.

IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

As IB learners we strive to be:

INQUIRERS

We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

KNOWLEDGEABLE

We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

THINKERS

We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

COMMUNICATORS

We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

PRINCIPLED

We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

OPEN-MINDED

We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

CARING

We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

RISK-TAKERS

We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

BALANCED

We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

REFLECTIVE

We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

The IB learner profile represents 10 attributes valued by IB World Schools. We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national and global communities.

Figure 7. The International Baccalaureate Learner Profile, 2013.

Skills. The next most common category in schoolwide definitions refers to skills that may lead to creativity. The codes that appear under this category are collaboration, communication, creative thinking, critical thinking, multiple languages, and “multiple perspectives. Of these codes, only "creative thinking" is directly linked to creativity, while the other codes refer to skills that can facilitate the creative process or infuse creativity into it. For instance, "collaboration" is often considered a necessary element of the creative process, and many design thinking models explicitly delineate the type of collaboration required at each step of the process. One school represented in the questionnaire has creativity as one of its strategic objectives. To achieve the schoolwide goal, the school has formulated and adopted schoolwide learning targets that use child-friendly language to specify their intentions. One such target states: "I am eager to explore new ideas and ask questions to deepen my understanding" (personal communication, March 2020). In my follow-up interview, it was revealed that teachers use these statements to plan the curriculum, explicitly identifying the skills that will be developed, how students will acquire them, and the assessment and feedback mechanisms for these skills. Currently, this school is exploring ways to integrate more opportunities for students to engage in self-reflection using these statements.

Conditions for Creativity

As I analyzed the questionnaire responses, I identified environmental characteristics and conditions conducive to fostering creativity. Despite variations in the personal and schoolwide definitions of creativity, my aim was to investigate if schools were engaging in similar work to address creativity. Seven categories emerged from the data: assessment, content, curriculum design, environment, pedagogy, resources, and student agency. The majority of these data were obtained from Question Four, which prompted respondents to identify two or three strategies

they use to promote creativity. While the question was framed to elicit specific examples from their work at the school, many responses referred to whole-school efforts. Reference to schoolwide attempts may be attributable to the fact that 10 of the 17 respondents were school leaders with oversight over multiple grade levels, which provides them with a systems-level perspective.

Student Agency

The most frequently mentioned category was "student-driven," with the most common subcategory being student choice in topics, assessment, and final product (see Figure 8). For instance, one respondent stated that "students are given a choice often so that teaching and learning is less about compliance and more about relevant topics." The term "compliance" carries a negative connotation. It suggests a departure from traditional approaches to education, in which teachers, curricula, or policies dictate the content covered in class. Other similar codes identified were "responsive" and "individualized," indicating that schools value learners' input and are creating more opportunities for them to play a larger role in their learning. While student agency is linked to increased motivation and engagement, it may not necessarily foster the development of students' creative skills in a deliberate manner.

Curriculum Design

In this category, Project-Based Learning (PBL) and Inquiry-Based Learning (IBL) were the most frequently mentioned codes, with each appearing four times. The PBL model is often used to engage students in problem-solving, emphasizing an authentic task or context, and these elements were also referenced in other responses. One respondent noted a preference for providing opportunities for students to create tangible objects customized to them rather than relying on worksheets or textbooks. Inquiry-based learning is a constructivist approach that

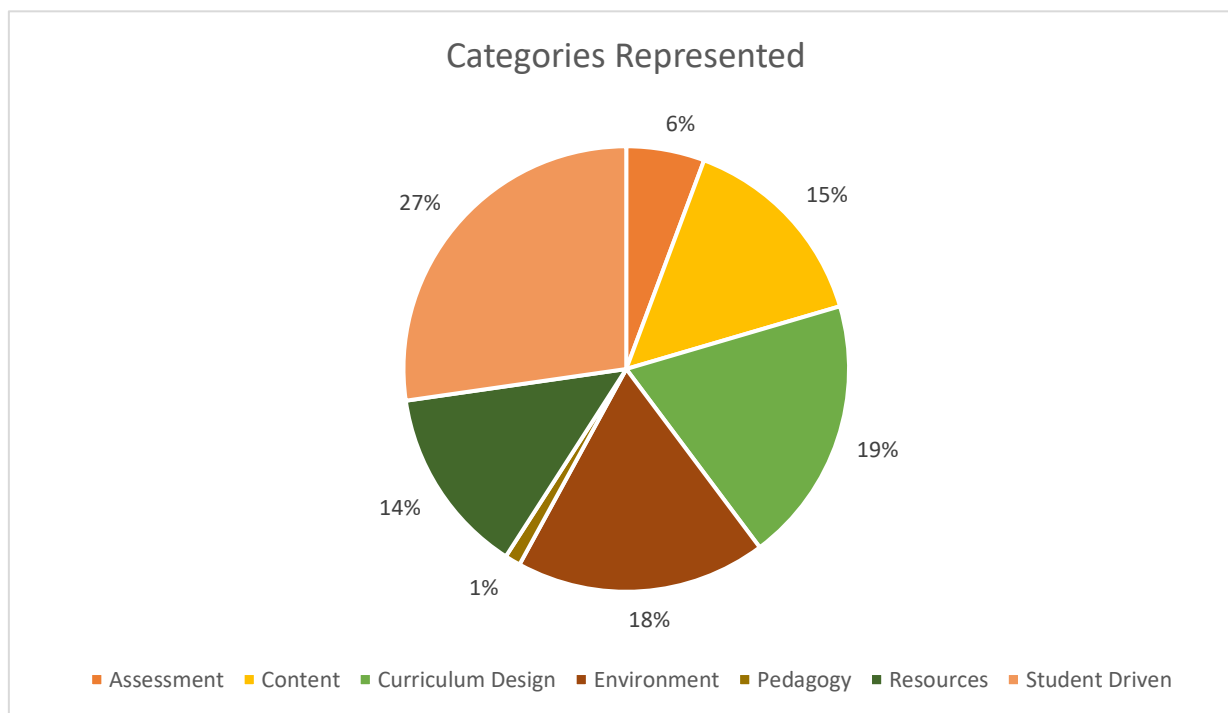


Figure 8. Fostering creativity in schools.

involves presenting a provocation to students to engage in a process of research and develop their understanding. Middle Years Programme and Primary Years Programme schools within the International Baccalaureate (IB) system require an inquiry-based approach. Design thinking, mentioned three times, is a process for students to develop problem-solving and thinking skills by designing a solution for a compelling problem. However, there are many similarities between inquiry, design thinking, and PBL, and these models intersect with the other codes in this category.

Environment

Time emerged as the most frequently mentioned element for an effective creative environment, appearing six times in the responses. One participant emphasized the gift of time as essential for creativity: "To me, creativity is what happens when one is afforded the gift of time. Time to take the concrete things that they know and apply them to imagination and trial and error. There are no barriers to creativity other than our own minds." Timetables in international schools are developed at the system level considering multiple constraints such as available personnel, space and contact time. Most international schools offer classes in the host country language to meet national requirements, honor host culture and language, and to meet the needs of a diverse student body. It is common for international schools to have specialist classes at all grade levels for physical education, music, and visual arts in addition to language classes.

Although timetables in international schools are typically developed at the system level, the other codes in this category pertained to the culture within the classroom. Respondents identified a supportive, collaborative, inclusive, optimistic, and flexible environment as conducive to creativity. For instance, one educator felt responsible for creating "classroom cultures where the process and explanation is valued more highly than a correct answer," while

another emphasized the importance of "emotional safety and the freedom to be silly, foolish, or wrong" in cultivating creativity. Risk-taking and perseverance were also identified as crucial traits for the creative process.

Content

Selecting relevant and meaningful content for students was the next category. The most mentioned code in this category -- thinking skills -- aligns with the view that creativity involves a range of related skills. One respondent stressed the importance of “proactively teaching thinking skills” to promote creativity in their classroom, and further added that they “define what creativity looks like in the classroom and recognize students when they display it.” Notably, this example was the only instance in which the concept of creativity was explicitly defined for students and feedback was given when they demonstrated it. Other codes identified in this category included “transferable” and “engaging.”

While accreditation agencies may have specific attention toward creativity, none specify a particular set of standards. International schools are diverse in terms of their curriculum offerings, and international schools may follow a variety of curricula depending on their location and target audience. Some international schools adopt a curriculum based on a global perspective, such as the International Baccalaureate (IB) or American Education Reaches Out (AERO) standards. AERO provides standards-based curriculum frameworks for international schools worldwide and are designed to align with Common Core State Standards and the Next Generation Science Standards in the United States, while also incorporating elements of international curricula.

Rather than adopting a set curriculum, many international schools chose to offer a combination of curricula or create their own designed to be relevant and applicable to students

from different cultures and nationalities. These curricula are designed to be relevant and applicable to students from different cultures and nationalities, while also providing an education that prepares them for university studies and beyond.

Resources

I analyzed the responses to the questionnaire regarding the physical environment and extracurricular activities that foster creativity. The respondents identified makerspaces and design labs as common feature in international schools. Four respondents provided examples of the school or classroom housing a makerspace or design lab. However, the respondents did not indicate how the spaces were used to foster creativity. One respondent cited the Primary Years Programme (PYP) Exhibition as an example of fostering creativity. The PYP Exhibition is designed for Grade Five students to demonstrate the attributes of the IB Learner Profile, which includes creativity, critical thinking, and collaboration. The project typically lasts for several months and involves students working in groups to investigate and explore a topic of their choosing under the guidance of their teachers. While elements of creativity are involved, the PYP Exhibition does not constitute an intentional school decision as it is required for all PYP schools.

Several responses noted that their schools offered a variety of extracurricular activities for students to select from, which is a common practice in international schools. Most international schools offer a selection of classes outside of the required school day for students and is often prominent in school marketing materials. At many international schools, after-school activities can be an additional revenue stream. However, an extracurricular approach to addressing creativity is outside core learning and not embedded into the curriculum. Some schools intentionally introduced more creative-focused after-school programs for students to opt

into, but the responses were not clear about purpose for financial gain, to attract more students to the school, or to increase creativity. Extracurricular activities may provide students with opportunities to develop their creativity and enhance their learning, but they are not a replacement for a curriculum that explicitly fosters creativity.

Assessment

The codes in this category were related to feedback rather than assessment practices. The focus was not on providing feedback on creativity but on related skills. One participant emphasized the importance of self-assessment, but considered reflection as part of a larger goal of allowing students time for independent exploration in an area of interest. The teacher feedback, in this case, focused on process skills and goal setting while students used self-assessment to evaluate their success. The lack of official reporting in such classes implies that creativity may be perceived as less important. Again, extra time provided to students to explore their interests may have been the objective, rather than part of the core learning at a school. However, one school has implemented proficiency scales to develop students' creative thinking skills. Although the respondent did not specify which subject areas or classes these scales were used, the response suggests a level of schoolwide commitment to providing more guidance to students on developing their creative skills.

Pedagogy

An important observation is the lack of emphasis on pedagogical change in fostering creativity. While there were mentions of inquiry, project-based learning, design thinking, and other models of curriculum design, little attention was given to the theory and practice of learning. Only one response acknowledged the significance of pedagogy in fostering creativity, and that response focused on the concepts of student agency, independence, and authentic

learning experiences. They state: “Learning is maximized when individuals own the process through personal relevance, choice, autonomy, and creation. Learning can best be transferred when it is embedded in authentic contexts and is used to address real-world issues in creative ways” (personal communication, March 2020). The lack of mention of pedagogy in the responses may indicate that more research is needed to better define the most effective pedagogical practices in fostering creative thinking skills.

Challenges in Fostering Creativity

Fostering creativity in international schools is a critical yet challenging endeavor. Creativity is essential for promoting innovation, problem-solving, and personal development among students. However, the questionnaire responses indicate various factors hindering creativity in international educational settings (see Table 11). Next, I explore international schools' challenges and obstacles in promoting creativity among their students. The obstacles can be broadly categorized into four areas: schoolwide constraints, external forces, mindsets, and tensions. By examining these categories and their associated codes, we aim to enrich the conversation about the difficulties faced by international schools in nurturing creativity and provide insights into potential solutions.

Schoolwide Constraints

Fostering creativity in international schools presents various challenges, particularly at the schoolwide level. One significant issue is the lack of a schoolwide definition for creativity, which was mentioned twelve times in the questionnaire responses. The absence of a schoolwide definition or understanding makes it difficult for schools to develop a coherent approach to encouraging creativity and indicates a need for more emphasis on developing creative thinking skills. Time constraints and the lack of inclusion of creativity in guiding statements further

Table 11

Challenges and Obstacles in Fostering Creativity

Categories	Frequency of Codes
Schoolwide Constraints	No Schoolwide definition – 12 Time - 6 Not in guiding statements – 5 School culture – 3 creativity not valued – 2 Protocols/plans - 1 Risk aversion – 1 Not a focus – 1 Teacher skill – 1 University entrance – 1
External Forces	Content/Curriculum – 4 Perception only – 4 Parent pressure – 3 Lack of consistency between schools – 2 External assessment – 2 School affiliation – 1 Language – 1
Mindsets	Teacher beliefs – 6 Student beliefs – 4
Tensions	Academic vs. creativity – 6 Traditional vs. Progressive -2 Early childhood approach vs. ES/MS/HS -1 Technology vs. creativity – 1

exacerbate this problem. School culture and the perception that creativity is not valued can hinder the development of school programs to better address creative thinking skills. Other factors mentioned are protocols and plans, risk aversion, a lack of focus on creativity, teacher skill limitations, and the prioritization of university entrance. These factors contribute to the challenges of fostering creativity within the international school environment.

External Forces

External forces was a key category of challenges that impacted the cultivation of creativity in international schools. The content and curriculum mandated by external authorities may constrain creative exploration and hinder teachers from designing learning experiences that develop creative thinking skills in their students. Referred to as a “crowded curriculum” by many international educators, additional curricular standards of the host country may dictate international school curricular focus. For example, for an international school to be recognized as an academic institution in Japan, the Ministry of Education requires all Japanese citizens to take Japanese language and culture classes. The number of hours per week varies by grade level.

The perception that creativity is not essential among stakeholders, such as school administrators, teachers, and parents or the host country education ministries, can profoundly impact students' creative development. This mindset may lead to a greater emphasis on standardized testing, rote memorization, and traditional academic subjects such as math, science, and language arts, at the expense of creative disciplines like art, music, drama, and creative writing. In this context, creative pursuits may be perceived as "extra-curricular" or "non-essential" activities, rather than integral components of a well-rounded education.

Pressure from parents to prioritize traditional academic achievements can further stifle creativity in international schools. Parents may have concerns about their children's future job

prospects and financial stability, again leading them to push for a strong focus on conventional academic learning. The pressure may result in schools allocating fewer resources and less time to creative activities or eliminating them. Parental expectations can directly influence students, causing them to view creative pursuits as less valuable and discouraging them from exploring their creative potential.

A lack of consistency between schools, external assessment pressures, school affiliations, and language barriers also contribute to the obstacles faced by international schools in fostering creativity. These perceptions and pressures contribute to an educational environment that undervalues creativity and hinders the development of creative skills that are crucial for success in the modern world. By acknowledging and addressing these concerns, international schools can work towards fostering a more balanced and creative learning environment that benefits all students.

Mindsets

The mental framework of beliefs, attitudes and assumptions – the mindset of teachers and/or school leaders -- play a crucial role in the development of creativity in international schools. Teacher beliefs about the importance of creativity and its place in the educational process may limit their ability to incorporate creative teaching practices. This code appeared six times in the responses. When teachers hold beliefs that downplay the importance of creativity or view it as secondary to traditional academics, they may be less likely to adopt creative teaching practices. The impact of teachers deemphasizing creativity can manifest in various ways, such as sticking to rigid lesson plans, focusing solely on factual information, or avoiding activities that encourage open-ended thinking, collaboration, and experimentation. Differences in teacher mindsets may hinder collaboration between teachers in developing curriculum together.

Similarly, student beliefs about the value of creativity can affect their willingness to engage in creative activities and develop their creative potential. They may refrain from taking risks in their learning. This reluctance could stem from a fear of failure, a desire to conform to perceived expectations or a belief that creativity is irrelevant to their future success. Such mindsets can lead to students focusing primarily on achieving high grades and meeting standardized benchmarks rather than embracing the learning process and discovering their unique creative abilities.

Moreover, the interplay between teacher and student mindsets can create a reinforcing feedback loop. For example, when teachers perceive that students are not interested in or receptive to creative activities, they may further reduce their efforts to foster creativity in the classroom. Similarly, if students perceive that teachers do not value creativity, they may be even less motivated to engage in creative endeavors.

Tensions

According to the questionnaire responses, tensions within the school organization presents obstacles to fostering creativity. One significant tension is the perceived dichotomy between academic achievement and creativity. This perception often forces schools to prioritize traditional academics over creative endeavors. A similar tension exists between traditional and progressive teaching methods, with traditional methods often taking precedence in the classroom. The differing approaches to creativity in early childhood education compared to elementary, middle, and high school levels can cause a divide in addressing creativity within one school. Finally, the tension between technology and creativity may lead to an overemphasis on technology at the expense of fostering creative growth.

Conclusion

In this chapter, I analyzed the results from the *International School Creativity Questionnaire* (see Figure 9). When analyzing personal and schoolwide definitions, similarities were evident. However, the range of how individuals define creativity indicates the importance of a common understanding of the concept. Interestingly, when respondents provided examples of environments that foster creativity, the discussion shifted to systemwide issues, curriculum design, or class culture. This indicates that, while all respondents valued fostering creativity, most schools have not had concrete schoolwide approaches with measurable outcomes. Finally, these results from a broader range of school contexts offer parallels to the challenges we faced at NOVUS International School. These questionnaire results, while valuable, only provide a macro view of creativity in international schools. However, the results raise additional questions about how schools address creativity, similar to those we encountered in the NOVUS International School case study. The purpose of the case study is to dig deeply into one international school, specifically a school founded on the principles of creativity, to understand better what fosters or inhibits creativity in schools. In Chapter 5, I provide context about the school and in Chapter 6, I delve into the specific challenges faced when opening a new school committed to creativity.

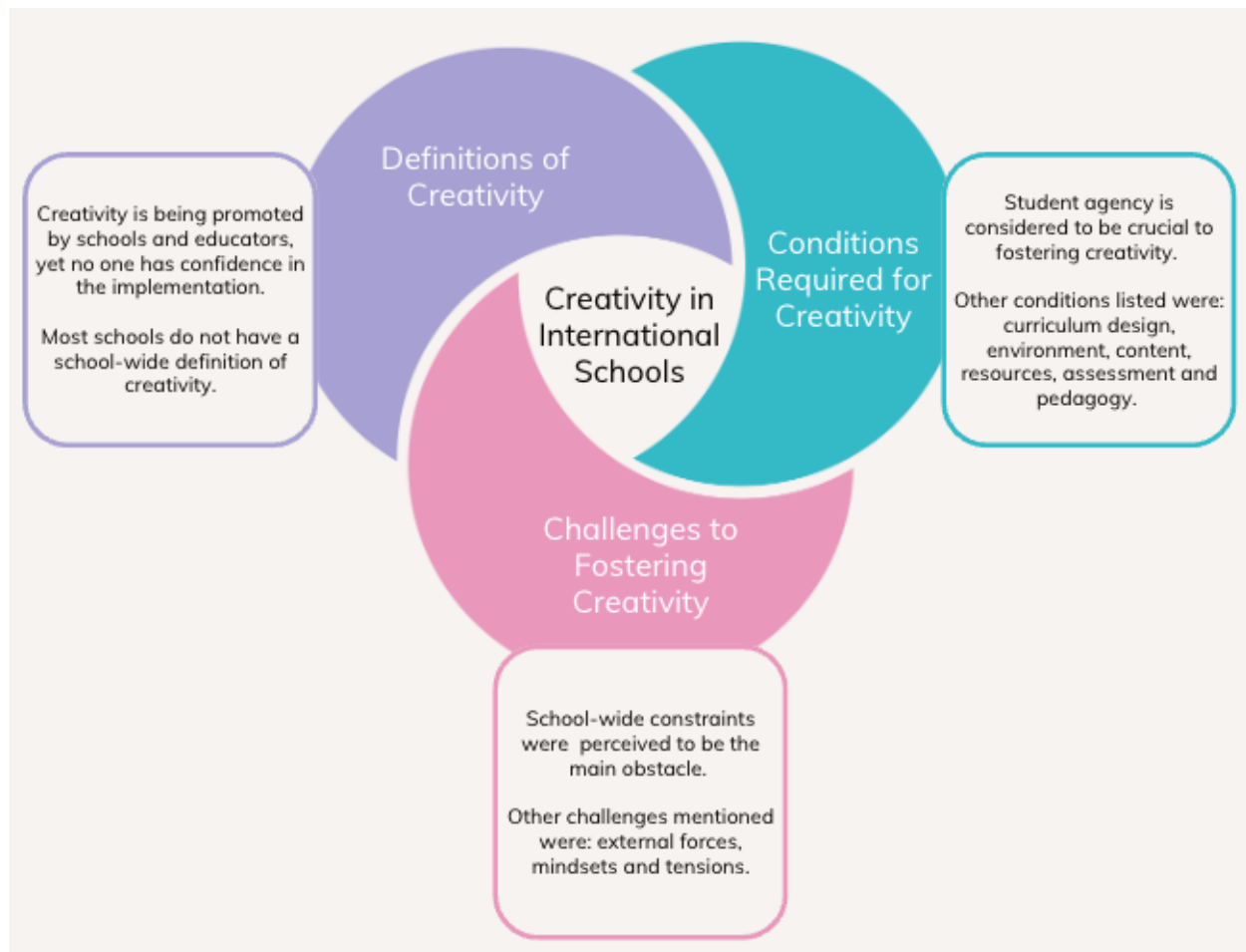


Figure 9. An overview of results from the International School creativity questionnaire.

CHAPTER 5: THE NOVUS INTERNATIONAL SCHOOL CONTEXT

“Namjai” – (origin: Thai) water from the heart

In Thai culture, the phrase "Nam Jai" translates to "water from the heart." Water holds great importance and meaning for the Thai people – the Chao Phraya river, which flows through the heart of Bangkok has been shaping their habitat and livelihoods for centuries. Moreover, water plays a leading role in cleansing rituals and practices. The term "Nam Jai" describes acts of kindness and generosity performed with pure intentions. In other words, being kind for no other reason than the sake of kindness. See Figure 10.

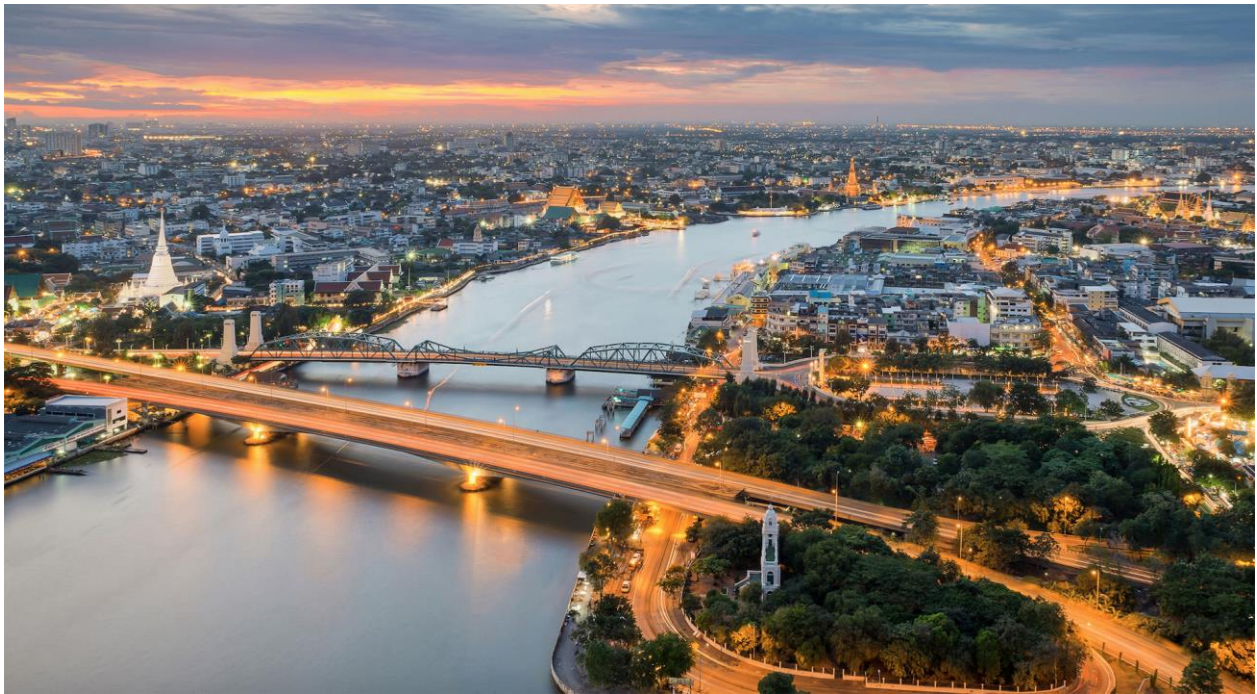


Figure 10. Chao Phraya river in Bangkok, Thailand

The host country's culture and traditions heavily influence each international school. In NOVUS International School's case, the spirit of *namjai* became an inspiration for the school's conception. In Chapter 4, I underscored the prevailing trend of schools and educators actively fostering creativity; however, the implementation of these initiatives is uneven. International schools face the ongoing challenge in formulating a proficient and efficacious framework to cultivate creativity. In Chapters 5 and 6, I report the analysis and findings of a comprehensive case study of NOVUS International School in Samut Prakan, a district outside of Bangkok, Thailand. The school represents a distinctive opportunity as a newly established school deliberately designed to encourage innovation and creativity among its learners. In a competitive market for international schools, introducing a different type of school model presented challenges on all levels. In Chapter 5, I provide a detailed overview of the case study context and is divided into five sections. First, I describe the educational context of Thailand, specifically the landscape of international schools. Second, the history of NOVUS International School is detailed, including its guiding principles, referred to as the "NOVUS DNA." Next, I describe the intentional and unique features of the NOVUS model, which developed based on the NOVUS DNA. Fourth, I present profiles of the Founding Learning Design Team members, of which I was a member; we are the primary subjects of the case study. Finally, I summarize the opening of the school in August 2020, which marked the culmination of the planning phase and the beginning of implementing the NOVUS model.

The International School Context in Thailand

Thailand has become a large market for international schools as a result of several economic and social factors with exponential international school growth from 140 in 2013 to 192 in 2021 (Brummet & Keeling, 2013). The Thai economy has remained stable despite the

effects of political turmoil and natural disasters, making it a prime market for international schools. Thailand, one of the founding members of the Association of South-Eastern Asian Nations (ASEAN) with Malaysia, the Philippines, Singapore, and Indonesia, all growing markets for international schools, has global influence and growth potential, which have influenced companies to invest and expand the Thai economy. While the COVID-19 pandemic and increasingly volatile political system have impacted the local market, the impact on Thailand's role globally is not yet clear. In describing the international school context, I include the families they serve, the range of curriculum offered, and the financial aspects of the industry.

Historically, international schools worldwide were established to provide education in English for expatriate families from North America, Australia or Europe. As the only choice for foreign students who would spend a limited time in a country before returning to their home country, only highly paid foreign professionals could afford the high tuition rates for their children. Globally, the purpose of international schools has changed as overseas high schools and universities have become the goal for many non-English speaking families worldwide. This shift has led to international schools having more representation from their host countries. According to the International School Consultancy Group (ISC), there are 192 international schools in Thailand, with the majority located in Bangkok.

In 2016, the Thai government's National Economic and Social Development Board (NESDB) developed the 12th Economic Improvement Plan, with a primary goal to become a high-income nation by 2026. The goal is one reason that Thailand has become a significant market for international schools. The law in Thailand restricts non-Thai children from enrolling in public schools unless the child has one Thai parent so, foreign residents find themselves with international schools as their only option. As of 2017, roughly 3.5 million foreign residents live

in Thailand, about 5.2% of the total population. Unlike other Asian countries, such as South Korea and China, the government does not limit local families choosing international schools over Thai public or private schools. These factors account for the large number of international schools in Thailand.

The 12th Social and Economic Plan (2017–2021) highlighted the low quality of the Thai public education system, despite its ranking as one of the highest education funding in ASEAN. This is substantiated by low test results in the Organisation for Economic Co-operation and Development's (OECD) Programme for International Student Assessment (PISA), the triennial international test that aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. In 2015, the results show that Thai education is below the OECD average for reading (ranked 57th), mathematics (ranked 54th) and science (ranked 54th). Far behind other South-Eastern Asian countries such as Singapore and Vietnam, influential and wealthy Thai families look for alternatives to Thai schools, with the hopes that their children can compete in a global market.

The tuition fees for international schools in Thailand vary greatly depending on several factors, such as the school's reputation, the students' age, the type of curriculum offered, and the school's location. The tuition fees range from approximately 300,000 Thai Baht per year for lower-grade levels to over 1.5 million Thai Baht per year for high school grades at top-tier institutions or a range of \$9,000 to \$45,000 (ISC Research, 2021a). Compared to international schools located in different global regions, international schools in Thailand typically offer relatively lower tuition fees than countries like the United States, United Kingdom, and Australia. In many cases, tuition fees for dependents of employees are often included as part of the relocation package provided by employers. The relatively low tuition fees serves as an

attractive incentive for companies, including prominent organizations like Toyota or Unilever, to establish a robust presence in Thailand. However, the cost of attending an international school in Thailand is still relatively high compared to the average income of Thai families. As a result, international education in Thailand is primarily accessible to high-income families.

However, the high tuition rates have not kept Thai families from deciding to join international schools. In alignment with the global pattern, there has been a consistent increase in the enrollment of local families in international schools in Thailand. According to the ISC, Thai students now make up 47.8% of the students enrolled in mid-market international schools, and 52.8% of those enrolled in premium schools, indicating that Thai students constitute the largest percentage of the international school market in the country. American and British are the most common foreign nationalities represented at international schools in Thailand. These figures do not account for students with dual citizenship (ISC Research, 2021b).

Thailand's demand for international education continues to grow, leading to the rapid development of new international schools. As of 2021, Thailand has 214 English-medium international schools, with 80,305 students and 10,296 teachers (ISC Research, 2021b). Thailand has the third-highest number of English-medium international schools in South-Eastern Asia after Malaysia and Indonesia. In addition to NOVUS, several other international schools opened new campuses in Bangkok, including two new schools offering the British curriculum as part of a larger network of UK schools. While the quality of international schools varies, Bangkok maintains a reputation for high-quality education. In fact, Bangkok was ranked among the top five cities for premium international schools in a 2021 report, alongside Dubai, Shanghai, Beijing, and Zurich (Knight Frank, 2021).

Globally, international schools adopt recognized curricula renowned for being rigorous and widely respected by higher education institutions and employers. The schools typically tailor learning outcomes in accordance with the educational standards of the host country, ensuring that they are contextually appropriate. This results in international schools offering a hybrid curriculum, piecing together different curricula, or creating their own, in order to prepare their students in a way that provides the best potential for learning and success. While the Thai Ministry of Education does not mandate international schools to adhere to the national curriculum, schools must meet specific guidelines related to Thai language and culture. International schools operating in Thailand must obtain approval from the Office of the Private Education Commission (OPEC), a group of Thai educators responsible for reviewing and evaluating educational programs.

Thailand provides a diverse range of curricula for families interested in international education. The British curriculum remains the most popular option, accounting for 53.7% of the international schools in Thailand. The American curriculum is the second most common, comprising 28.5% of international schools. Additionally, a significant number of international schools offer the International Baccalaureate (IB) curriculum, accounting for 12.1% of international schools in Thailand. Other curricula such as the International Primary Curriculum (IPC) and the Cambridge curriculum are also available (ISC Research, 2021a). The curriculum of the international school is a crucial criterion for families seeking to enroll their children in such institutions in Thailand. Families typically rely on their prior experiences and aspirations for their children's higher education to determine the choice of international school.

Accreditation and membership in worldwide organizations are key indicators of the quality of international school education. Numerous international schools in Thailand meet these

requirements, with accreditation bodies serving as independent organizations responsible for evaluating a school's performance against established standards. Accreditation verifies that a school has satisfied these standards and improves its market position. As of 2022, 56.4% of international schools in Thailand are fully accredited by a recognized accreditation body, with the majority holding accreditation from the Council of International Schools (CIS) and the Western Association of Schools and Colleges (WASC). The International Schools Association of Thailand (ISAT) is the largest association in the country, with 142 member schools. In addition, several global school groups have established schools in Thailand, with Cognita being the largest with four schools. Cognita has 83 schools in eleven countries in Europe, Latin America, the Middle East, and Asia. Other notable international school groups include Nord Anglia Education, which operates two schools in Thailand, in addition to 73 schools in 30 countries. The Harrow Foundation, operates six schools worldwide, including one in Bangkok. King's College School, Wimbledon, founded in 1829, opened a new campus in Bangkok in August 2020 (ISC Research, 2021a).

Thailand continues to offer a wide range of high-quality international schools, providing ample options for families seeking an international education. As of 2022, the ISC Market Report indicates that premium and mid-market international schools in Thailand have occupancy rates of 72.2% and 77.7%, respectively. Additionally, the report estimates that families visit an average of 15-20 schools before deciding on a school. The data were collected prior to the global COVID-19 pandemic, and the resulting economic impact may have affected parents' decision-making processes as tuition fees vary widely between schools. This creates a competitive environment within the international school community for student enrollment (ISC Research, 2021b).

Consequently, the range of international school options creates a market in which families have multiple options and frequently move from one international school to the next. According to the International School Consultancy (ISC) Market Research, the student mobility rate within international schools in Bangkok is relatively high compared to the global average turnover rate. In their 2022 report, ISC estimates that the average student turnover rate in Bangkok international schools is 20-25% per year, while the average student turnover rate in international schools worldwide is 15-20% per year. Several factors affect the turnover rate, including ex-pat families relocating, students transitioning from primary to secondary school, and students leaving for academic or social reasons. ISC notes that the number of students transferring from international schools to local schools in Bangkok increased slightly in recent years, likely due to the economic impact of the COVID-19 pandemic (ISC Research, 2021a).

Parents who seek an international education in Thailand have ample choices. These figures were published prior to the global COVID-19 pandemic, and the economic impact on the business sector continues to affect parents as tuition ranges widely from school to school. However, clearly, these factors contribute to the sense of competition within the international school community for enrollment, and the NOVUS story is one of innovation, but marketing plays a key role in attracting Thai families.

The Origin Story of NOVUS International School

From its inception, the concept of NOVUS International School was to be different from other traditional schools. The Founding Head of NOVUS International School, emphasizes this desire in explaining the school's initial roots. He states that the starting point for the project was a simple question: "How can we design a new international school that will truly prepare its

students for a world that is changing faster than at any other time in human history?” This section will delve into the origin of NOVUS International School (see Figure 11).

In 2014, Howard Liang and Keeree Kanjanapas announced a joint partnership to build a new international school in Bangkok (see Figure 12). Kanjanapas is the Chairman of the Board of Directors of BTS Group Holdings Plc and U City Plc. In 2017, the NOVUS International School project in Thailand was initiated through a formal partnership between Fortune Hand Ventures, Ltd and BTS Group Holdings, Plc. U City Public Company Limited, an affiliate of BTS Group Holdings, was directly involved in collaborating with NOVUS. BTS Group Holdings (BTSG) is a privately-owned conglomerate and one of Thailand’s largest infrastructure developers and operator of Bangkok's Skytrain transportation system. U-City, a subsidiary of BTS Group Holdings, has a portfolio of ventures primarily in the hospitality sector across Europe and Asia and possesses a market capitalization of 12,687 million Thai Baht (approximately 389 million USD). This marked their first venture into the education sector and Fortune Hand Ventures' investment in NOVUS represents Thailand's largest single foreign investment in international schooling.

The Liang family has a long-standing involvement in education, having invested in St. Johannes College in Hong Kong and the American International School. The Liang family owns and has successfully run the American International School of Hong Kong since 1986. Canberra ended his long tenure as Head of School at the American International School of Hong Kong to join the NOVUS project as the Founding Head of School. The connection between the Thai and Hong Kong investors is personal, as the head families have been longtime friends. The Liang family, having experienced the Khao Lak tsunami in 2004, were deeply moved by the



Figure 11. Timeline of NOVUS International School.

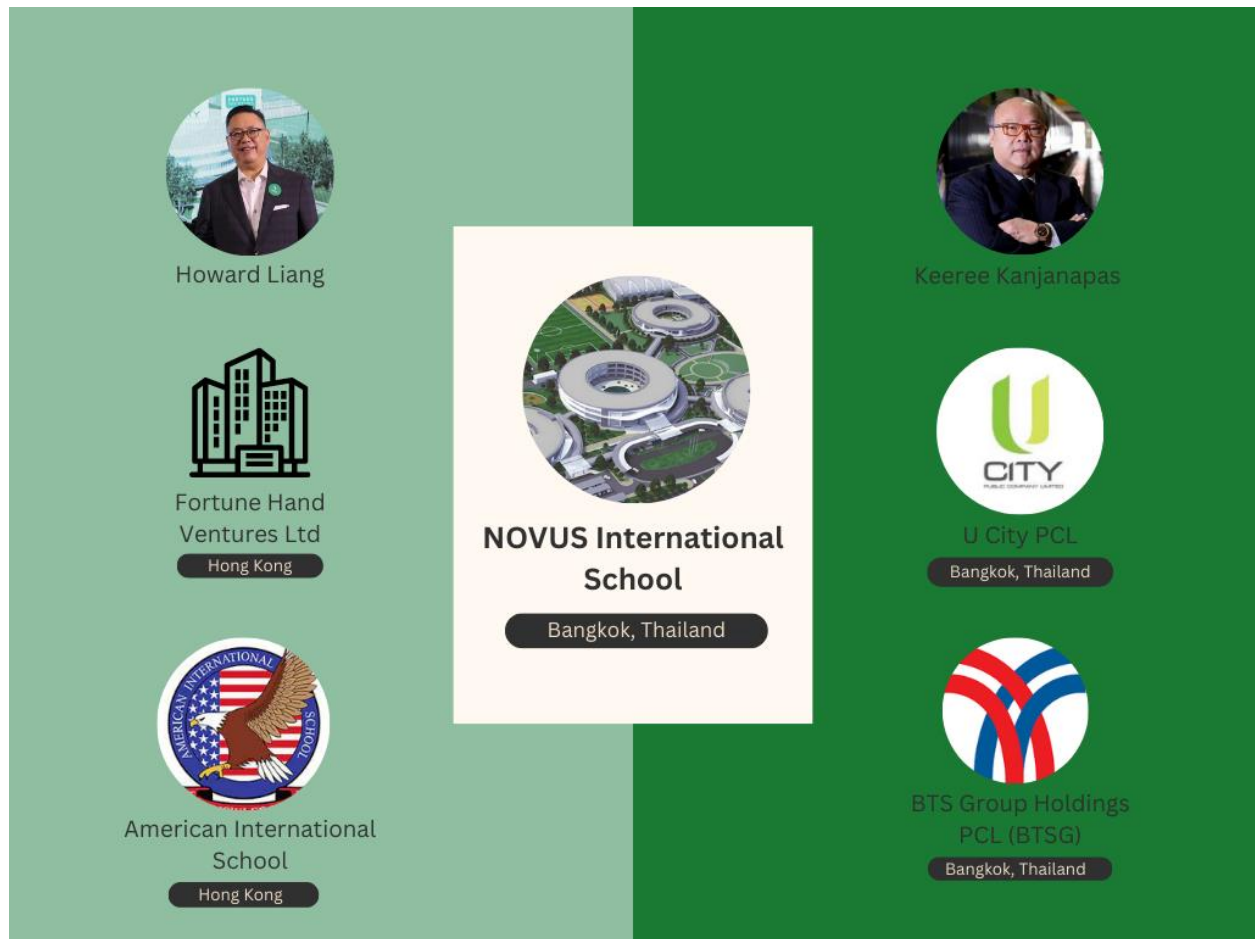


Figure 12. Ownership of NOVUS International School.

compassion they encountered during the aftermath. Howard Liang, together with his wife Luanna Liang, spoke in an interview with The Nation Thailand, recounted that twenty members of the Liang family, including their young children were in Phuket when the tsunami struck on December 26, 2004. “Our two boats were crushed to pieces and we were separated,” Liang said. “Luckily waves carried me to an island, where local people helped evacuate me and other survivors to a high area where the tsunami waves could not reach.” They were impressed by the generosity, or “namjai” in Thai, as they reunited with loved ones and the experience led them to commit to reciprocating the kindness Thailand displayed during their time of need.

At a press conference in 2019, Kanjanapas highlighted that the partnership aimed to establish a pioneering international school with innovative learning approaches and extensive facilities: “Through this partnership we are building a new international school that offers a groundbreaking approach to learning combined with expansive facilities that will nurture a new generation of visionaries. At the same time, we are transforming one of the company's assets next to our Thana City estate on the Bangna-Trad road into a value-accretive property for the future.” With a total investment of 5 billion baht (approximately 162 million USD), the state-of-the-art NOVUS International School was built on a 168 rai (67-acre) campus in Thana City, which holds the distinction of being the largest land plot among all schools in Bangkok.

NOVUS International School is located within the Thana City golf precinct in the Samut Prakan province south of Bangkok. Located south of Bangkok, Samut Prakan is the second most populous city with approximately 390,000 residents. Within Thana City, there is a golf course, hotel complex, and resort. In addition, there are low-rise domestic housing and several high-rise housing complexes. Thana City is positioned along the Bangna Trad highway and expressway, which serves as a major artery to Chonburi and Chachoengseo to the east and Pattaya and

Rayong to the south. In 2018, the Thai Parliament approved a law for trade and investment into the Thailand Eastern Economic Corridor (ECC). The goal is to develop Chonburi, Rayong and Chachoengseo provinces into an ASEAN hub for technological manufacturing and services for 2021. Thana City is considered to be the gateway to the ECC, which has contributed to Thana City developing into a mid-range residential area. Bangkok, Thailand's capital and most populated city, has an estimated population of 10.7 million in 2021. The school is strategically located within a five-minute drive from Suvarnabhumi Airport, the international arrival point in Thailand and major transfer hub for Southeast Asia, and along the future Bangna-Suvarnabhumi line of the light rail transit (see Figure 13).

In 2014, five international school educators developed a concept for a school that would prepare students differently from previous international school experiences. While they generated collective experience and ideas, they concurred that they needed to be more innovative. In 2015, NOVUS partnered with San Francisco-based innovation and global design company IDEO, to create a unique vision for the school. Between 2015-2016, IDEO designers and a team of international educators studied over 50 schools and visited 25 examples of school innovation worldwide to form the NOVUS concept. The group tested prototypes of schools of sample brochures and mock websites to conduct market research with students, teachers, and families living in Bangkok, the United States, Singapore and Hong Kong. The NOVUS concept is summarized in the “NOVUS DNA,” (see Figure 14). The endeavor was named “Project Sunscreen.”

Both the IDEO designers and the original team of educators on the project, worked to develop the NOVUS DNA from three beliefs, or “pillars”. The first belief addressed the demand for an international education rooted in a strong sense of personal and cultural identity. The first



Figure 13. Location of NOVUS International School.

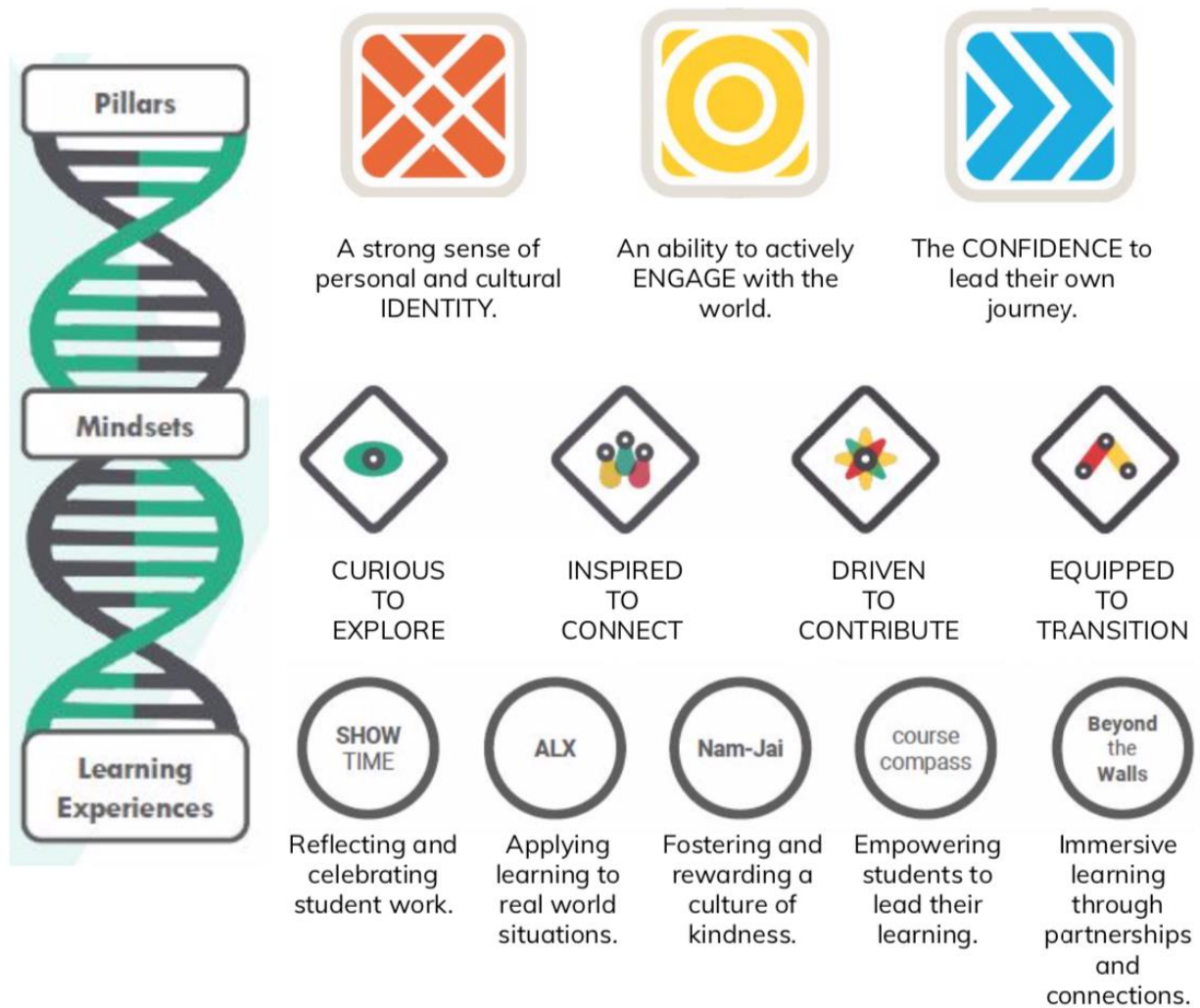


Figure 14. NOVUS DNA.

pillar addressed the shift of international schools from a place for expatriate families to send their children to a more complicated student body that reflects the host country. By addressing the complexity of cultural identity of international school students, they were targeting family backgrounds that were not as straightforward as the passports they held. The second belief addresses recent shifts in international schools to address global citizenship and prepare students who actively engage and contribute to the local and global community. Lastly, the third principle of the original design was an acknowledgement of the nature of work changing. Even before the impact of the global pandemic, the IDEO designers stressed the need for future graduates to have the confidence and skills to lead their own personal growth and development as the workplace had changed drastically over the last century. In sum, these principles address the increased awareness of families from privileged backgrounds and the potential for greater impact. Thus, based on these principles, the NOVUS DNA included four mindsets, “Curious to Explore,” “Equipped to Transition,” “Inspired to Connect,” and “Driven to Contribute.” These represent key mindsets NOVUS students would develop in their education. Based on principles and mindsets, the NOVUS DNA included five learning experiences in which all learners would engage in, which established some elements of the NOVUS school model. Attempting to actualize the principles, mindsets, and learning experiences occurred simultaneously with construction of the campus and marketing the school.

In 2017, construction of the NOVUS campus began. The investors made intentional decisions about the campus design to align with the NOVUS DNA and maintain a competitive advantage in a saturated market (see Figure 15). They included state-of-the-art sports facilities, including Thailand’s first and only Olympic-sized indoor swimming pool with climate control.



Figure 15. The NOVUS International School campus.

Other facilities include tennis courts, a hybrid soccer pitch, a track, a gymnastics studio, and an air-conditioned gymnasium. NOVUS has three circular buildings or ‘loops’ designed “to create a sense of interconnectedness, fluidity, and a collaborative learning environment In which ideas and knowledge flow continuously.” The main building, called “the HUB,” contains a cafeteria, a café for parents, and a coworking space for educators. The HUB houses recording studios and a performing arts black box space that boasts a 360-degree green screen space. Learning spaces within each loop are separated by flexible walls which can allow teachers and students to use the space freely. The campus is designed for 1,800 students.

As design and construction began, the investors committed to building the curriculum long before the school was to open to students in August 2020. In August 2018, a team of three learning designers (Katella, Pacifica, and Magnolia) worked on the foundation of the academic program in Bangkok. Katella and Pacifica are originally from Australia and spent time as leaders in two different schools in Tokyo, Japan. Magnolia worked with Canberra at American International School in Hong Kong and was on the team that worked with IDEO to visit schools and participate in the market research. Canberra was finishing his tenure in Hong Kong and was not yet on-site in Bangkok. While working in Hong Kong, Rockpoint served as the Director of Technology.

The investors hired twelve educators, including myself, a year before opening to develop the curriculum and prepare for students. The yearlong planning period was a significant financial commitment as salaries were developed using an average of the top international schools in the world. According to Bolman and Deal (2017), the decision to form a team of experienced educators a year in advance is one made in the human resources frame. They describe the relationship between people and organizations as need-based: “Organizations need ideas, energy

and talent; people need careers, salaries, and opportunities” (p. 122). The investors recognized the need for a team dedicated to the educational decisions and implementation of the learning program. The five members recruited a Learning Design Team for 2019-2020 and sought diversity by hiring educators from various countries of origin, experiences, cultural backgrounds, genders, and sexual orientations. In a later section, I describe the Learning Design Team I was a member of.

Beyond the Physical Structure: Design of the NOVUS Model

As mentioned in the previous section, IDEO helped to develop the NOVUS DNA, which outlines the school’s purpose and values. IDEO’s human-centered approach to design thinking has influenced NOVUS’s organizational culture and its vision for learning. The founding HOS (Head of School) said, “We want to show families that school can not only be different, but actually better for every student. At NOVUS we believe students will go above and beyond the types of learning they are traditionally asked to do in school. We have designed and built a school to inspire students and help them develop the skills and mind-sets they will need for a future that is highly unpredictable.” Next, I describe the NOVUS elements that the Learning Design Team determined -- cohort model, the American curriculum and accreditation – and then describe the members of the team.

Cohort Model

The initial planners decided to organize classes into multiage cohorts instead of traditional classes. Multiage classrooms, in which students of different grade levels learn together in the same classroom, has several benefits for students. According to a study by the National Center for Education Statistics (NCES, 2000), children in multiage classrooms have higher levels of socialization and cooperation. Additionally, the National Association of

Multiage Educators (NAME, 2002) found that multiage classrooms can promote differentiated instruction; as teachers meet the individual needs of students, the students have more personalized learning experiences and greater engagement (Henderson & Mapp, 2002). Furthermore, multiage classrooms provide opportunities for mentorship as older students act as role models for younger students, helping to build leadership skills and a sense of responsibility (Bredekamp & Copple, 1997).

Additionally, multiage classrooms foster a sense of community and camaraderie among students as they work together to achieve common goals (NCES, 2000). Furthermore, children can stay with the same teacher for multiple years, which can help to create continuity in their learning experiences and a stronger sense of trust and connection with their teacher. Multi-age classrooms are more flexible than traditional classrooms and adapt to the changing needs of students (Henderson & Mapp, 2002). Overall, multiage classrooms have been found to have several benefits for students, including socialization, differentiated instruction, mentorship, community building, continuity, and flexibility.

As a result, the organization of grade levels at NOVUS was divided into three categories known as "loops." The Lower Loop includes the Early Years program and grades up to four, the Middle Loop covers grades five to eight, and the Upper Loop is designated as the high school level. Within each loop, the grade levels are further divided into cohorts, with two grades per cohort. The opening of NOVUS school was phased, beginning in August 2020 for students from ages two to eight. The Upper Loop opened in August 2021 with grade nine and expanded by one grade level each year.

American Curriculum and Accreditation

The team selected an American national standards and determining accreditation organizations for NOVUS International School, satisfying a goal of an international school that is viable and recognized. Particularly in a competitive market such as Bangkok, the selection of standards is paramount, and this choice comported with parent goals of sending their children to American schools for college.

However innovative the team hoped to be, Thai compliance standards are strict. Opening a school in Thailand starts with submitting an educational license application to the Thai Ministry of Education, which necessitates providing information such as instructional minutes per subject, standards to be employed, and textbooks to be adopted. Despite thinking the requirements are outdated, the schools have to comply. One example is textbook adoption. While many international schools may have textbooks on hand as a resource, very few elite schools are adopt a textbook series outright as they are written for schools in the United States. Adopting a single textbooks or series conflicted with the innovative and creative model NOVUS was aiming to achieve. As explained in the previous section, NOVUS was designed for multi-age classrooms. In addition, the application required outlining the number of minutes for each subject per grade level, the maximum number of students and teachers in each grade for each classroom, and the number of credits required to move to the next grade level. In the next chapter I explore the impact of the rigidity of the Thai Ministry of Education application on planning.

As previously stated, market research indicated that many established international schools in Bangkok had adopted British and IB curricula. In light of the prevalence of British and IB schools, as well as the history of the Hong Kong investors who operate an American school in Hong Kong, the planning group adopted the Common Core State Standards for English

Language Arts and Math, the Next Generation Science and Engineering Standards, and the C3 Social Studies standards. However, the Thai Ministry of Education did not accept these standards and required the selection of a set of state standards. Thus, the leaders adopted New York state standards because it is one of the few states in the United States that has adopted all available national curricula.

Naturally, the next step was to seek initial accreditation from a globally recognized organization. Again, the history of the investors and the initial educators on the project led to NOVUS working with WASC for accreditation. Canberra has worked as a WASC Visiting Team chair for many years, along with Pacifica, who had a similar relationship with WASC. While WASC required fewer details than the application for the Thai teaching license, the accreditation standards needed to be considered as decisions were made. One such example is standardized tests. While standardized testing is widely used as a tool for evaluating student performance and measuring the effectiveness of educational systems, this concept needs updating to reflect a progressive school model. Secondly, a core principle of NOVUS was not to adopt standardized testing because the tests do not reflect students' diverse learning styles and the tests often lead to narrowing the curriculum. Yet, the WASC standards emphasized the need for benchmarking students and tracking progress over time. Thus, in the NOVUS model, the designers preferred alternative forms of assessment, such as performance tasks, portfolios, and classroom-based assessments to provide a more comprehensive and accurate picture of student learning.

Learning Design Team 2019-2020

NOVUS implemented an organizational framework akin to conventional institutions and organizational charts (see Figure 16). The Head of School (HOS) was responsible for reporting to a board, while Loop Leaders supervised individual sections and guided their respective

Updated January 2020

EDUCATION ORGANIZATION CHART

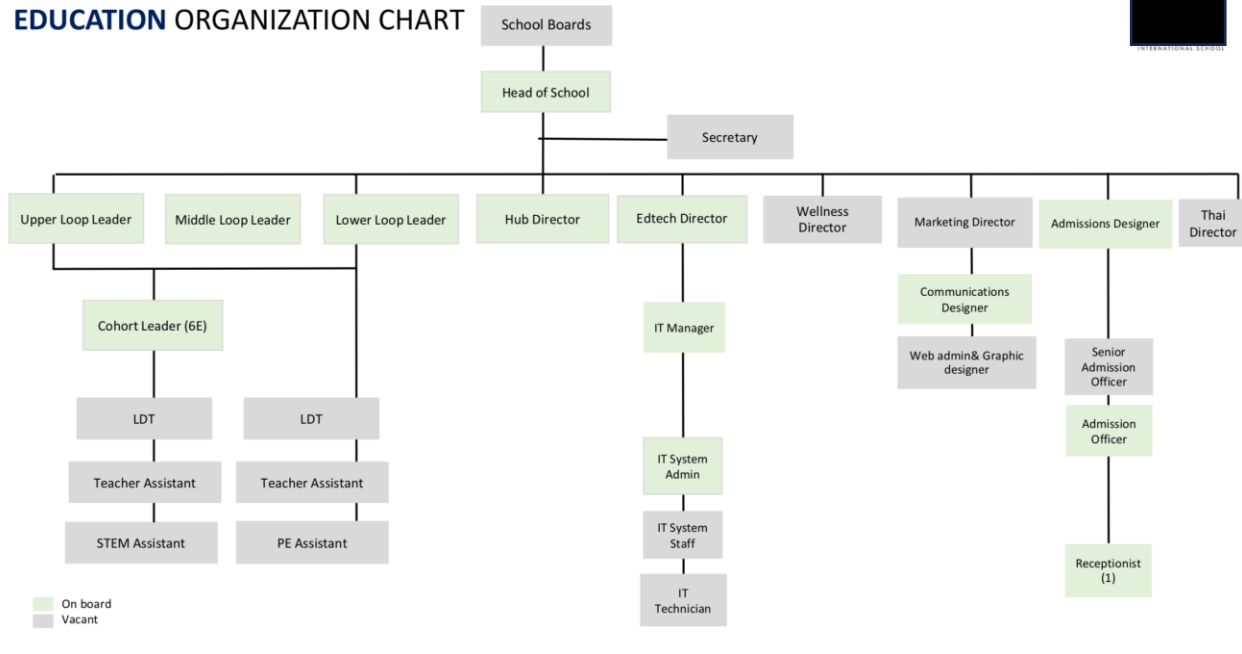


Figure 16. The organizational structure of NOVUS.

divisions. The green boxes in the diagram denoted positions occupied as of January 2020.

However, numerous roles remained vacant, and their fulfillment was included in the planning for the year before the school opened. In addition, the organizational structure pertained solely to the educational sector of the school, with the operations team functioning as an independent entity.

As previously indicated, the investors committed to recruit twelve educators who would constitute the founding Learning Design Team. Consequently, members of the founding Learning Design Team were afforded opportunities for professional development in areas such as innovative educational practices, the evolving landscape of work, and progressive changes in the field of education. Given that my case study focuses on the challenges encountered by the team, I furnish information about each individual team member. To preserve anonymity, certain details have been altered. The team convened in August 2019 to commence planning for the school's anticipated opening in August 2020.

In August 2019, a cohort of twelve educators, including myself, with diverse backgrounds embarked on a year-long endeavor to conceive and design an innovative school in Bangkok, Thailand. Our collective aim was to fashion a curriculum and learning program that diverged from traditional educational models, focusing on equipping students for future challenges. The opportunity to critically examine established school structures captivated each participant, motivating their decision to join the NOVUS International School team. Due to ongoing construction at the campus, the founding Learning Design Team and staff initially operated from the Project Studio, a space in a hotel owned by Thai investors. In February 2020, the team relocated to the main campus premises.

In addition to our core responsibilities, the founding team contributed insights to marketing initiatives and actively participated in various events throughout the year. These

events encompassed press conferences, panel discussions, and workshops targeted at parents, all regarded as marketing and admission endeavors aimed at attracting prospective families and students. Furthermore, we engaged with potential families through personal meetings and conducted online events specifically designed to address inquiries posed by prospective families.

To respect privacy, pseudonyms replace actual names, and previous school affiliations are omitted (see Table 12). Each member was specifically recruited for their leadership acumen and history with innovative programs. While I indicate their last role and location, the majority of the team had diverse experiences spanning a multitude of international and U.S.-based independent schools. Some team members hired during the planning year did not have an assigned role, providing flexibility to adjust to enrollment needs and other positions when the school commenced. With a male-to-female ratio of 5 to 7, the team's gender distribution was relatively balanced and reflective of international schools worldwide. International schools, similar to U.S. schools, are mostly comprised of women, although the gender ratio may fluctuate due to factors like geographical region, grade levels, and the school's location. Historically, teaching has seen a higher representation of female teachers, particularly at the primary and secondary school levels. The male to female ratio is inverted when examining the gender makeup of leadership positions.

The founding team was predominantly comprised of Americans, with five of the twelve members being American passport holders. However, the ratio does not accurately reflect the cultural diversity within the team, as three out of the five Americans were of Asian descent. Four members of the team identify as people of color, and all were of Asian heritage, including myself. Despite the intent to cultivate a diverse team, ethnic diversity was not significantly realized in this group.

Table 12

Members of the Founding Learning Design Team

Pseudonym	Country of Origin	Original Role at NOVUS	Previous Location and Role
Canberra	Scotland, Male	Founding Head of School	Hong Kong Head of School
Pacifica	Australia, Male	HUB Director	Tokyo, Japan Director of Learning
Katella	Australia, Female	Lower Loop Leader	Tokyo, Japan Elementary School Principal
Chandon	Australia, Male	Middle Loop Leader	Vientiane, Laos Middle School Principal
Rockpoint	USA, Male	Technology Director	Hong Kong Head of Technology
Magnolia	Hong Kong, Male	TBD	Hong Kong Curriculum Coordinator
Newland	USA, Male	Early Years Cohort Leader	Phuket, Thailand Early Years Coordinator
Monitor	Australia, Female	C1-2 Leader	China Grade 2 Teacher
Adams	USA, Female	ML Cohort Leader	USA Science Teacher & Outdoor Education Coordinator
Surfcrest	New Zealand, Female	ML Cohort Leader	Singapore Grade 5 Teacher
Portofino	USA, Male	TBD	USA Design Teacher
Mihoko (myself)	USA, Female	C3-4 Leader	Tokyo, Japan Elementary School Principal

The Learning Design Team had prior interconnections between and among multiple members. In international schools, employment opportunities are frequently disseminated via personal networks. Figure 17 visually represents these prior relationships among the team members. A solid line connects individuals who had previously worked together. For instance, a member named Chandon had collaborated with three others in different educational contexts. In addition, two team members, Katella and Pacifica, are married – a fairly common occurrence in international schools. Schools often establish policies to prevent potential conflicts, such as couples working in distinct departments. If a couple is in different departments, the intensity of workdays results in minimal interaction, which reduces the complication of a romantically linked couple working at the same school. Interestingly, two team members had no pre-existing connections with any other team member. These prior relationships could be assets or hindrances depending on the team's dynamics. The NOVUS project required the entire team to work together closely in a shared space, which intensified the importance of a solid and uncomplicated working relationship.

While my last position was Elementary School Principal at an international school in Tokyo, I was hired to be a team leader for the third and fourth grade team. The model was designed to position one middle leader for each cohort, allowing for continued work as a leadership team after the school opened to students. A job description for the planning year existed and we understood that our responsibilities as middle leadership would shift as needs grew. While I balanced my dual role as researcher and practitioner, I struggled alongside the other team members to meet the challenges of the project. However, immediately before the 2020-2021 academic year, I was appointed as the Lower Loop Leader following the departure of five members of the initial Learning Design Team.

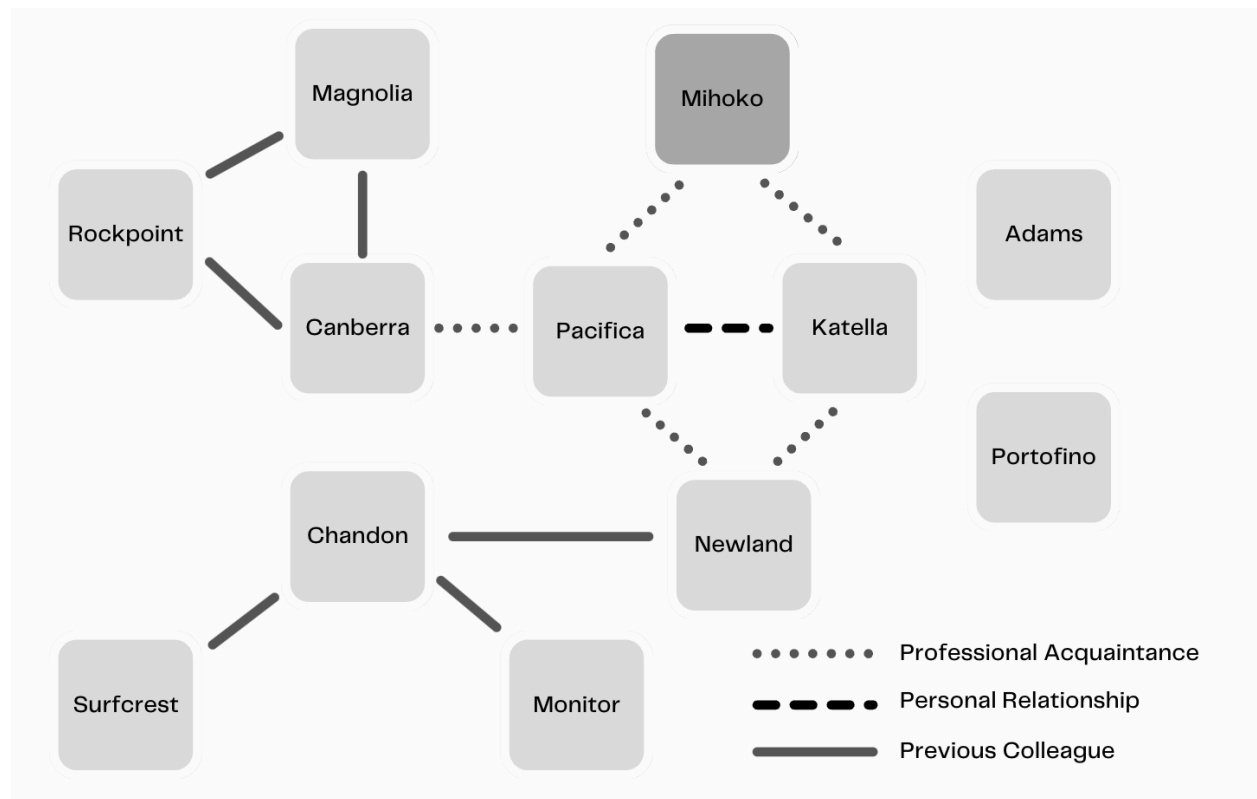


Figure 17. Relationship map of the founding Learning Design Team.

During the 2019-2020 school year, the Learning Design Team members were tasked with several assignments, primarily designing the curriculum and school model. The NOVUS DNA and multiage cohort model were pre-established components meant to be integrated into their planning. Using these components, the team had to design the initial study units, draft the curriculum policy documents, craft the schedule, and establish collaboration protocols before the student intake in August 2020. Essentially, they were grappling with the central question: "What does learning look like at NOVUS International School?" In addition, responsibilities such as recruiting teachers and coordinating team teaching formed part of their tasks. The team perceived the project as a unique, once-in-a-lifetime opportunity to construct an innovative school from scratch.

However, amidst the exciting venture, unexpected tasks arose. The team found themselves responsible for planning and hosting workshops for potential parents and providing input into marketing efforts for the workshops and admissions. The team's collective experience, garnered from their history with other international schools, helped them identify additional needs. Apart from curriculum policies, the team deemed it necessary to draft admissions and learning support policies before the school welcomed its first batch of students. Gradually, the list of responsibilities grew, with no clear hierarchy or delegation. In the next chapter, I analyze the challenges faced by the team.

School Launch

As the preparatory year ended, the school be ready to welcome students by August 2020. I elaborate upon this critical period, outlining the intended staffing model as well as the demographic composition of the student body. Certain aspects of the student demographics deviated from initial projections, some of which I discuss.

NOVUS' staffing model was devised with team teaching at the core, catering to multi-grade learners within a shared space. We conceived the model to break away from conventional systems, adopting a collaborative approach to meet the educational needs of students (see Figure 18, the projected staffing model for 200 students). The design encompassed different grade levels, paired to form cohorts, each with its designated student count, core cohort teachers, and learning assistants. The founding Learning Designers were to transition into middle leadership roles for each cohort to ensure continuous development of the curriculum, alignment, and attainment of school objectives. Furthermore, specialist teachers would deliver specific classes in areas such as Thai and Chinese language, and Design. Despite not reaching the target enrollment of 200 students, the Learning Design Team recruited and appointed educators for these roles for the 2020-2021 academic year, thus creating a discrepancy between the model and the reality.

Marketing and student admission continued throughout the 2019-2020 planning year, the global outbreak of COVID-19 began to cast a shadow over the team's work and student enrollment. More details about the specific impact is discussed in the next chapter. Certain obstacles became evident between January and April as the team held multiple parent workshops. Although parents were impressed by the campus, parents of older students hesitated to enroll their children in an untested institution with no proven track record of university admissions. Moreover, parents were more accustomed to well-established programs such as the International Baccalaureate or the British curriculum, a more predominant curriculum in Thailand. While NOVUS had hired teachers for 200 students, this target was a challenge to meet.

In response to the lagging enrollment, the leadership introduced the Namjai campaign in May 2020 to increase student intake. The initiative included waiving tuition fees for the academic year 2020-2021 and promised a 50% reduction in fees for the following year. With

these incentives, admission requirements were relaxed, attracting a larger number of families who otherwise may not have considered international schools.

In keeping with NOVUS's goal to pioneer a novel model of education, achieving alignment between the school's mission and the philosophical inclinations of the families became paramount. Two interesting ramifications of the changed admission requirements, which no longer necessitated confidential references from previous schools, was an increase in students requiring specialized learning support and English language assistance.

In addition to the teachers hired based on the model detailed in Figure 18, two English as an Additional Language (EAL) teachers and one Learning Support teacher were recruited. These educators constituted the "Student Success Team," entrusted with the responsibility of assisting core teachers in catering to these specific needs. After the alteration in the admission requirements, which evidently necessitated an increased level of specialized support in English language and learning needs, no other modifications were made to the model.

In August 2020, NOVUS International School opened its doors to a total of 171 students. Table 13 displays the breakdown of male and female students per grade level. Although the grade distribution was uneven, the gender balance across the school was maintained. A notable trend was the higher number of students in the Early Years and elementary grade levels. The Lower Loop housed the Early Years program and Grades 1-4, starting with students from two years old. The Lower Loop opened with 105, whereas the Middle Loop opened with 66 students. The trend was reflected in the marketing events and Open Houses, where 80-90% of prospective families had younger children. The staffing model was not designed for this imbalance, which posed some of the challenges described in the next chapter.

	COHORT	GRADE LEVEL	MAXIMUM NUMBER OF STUDENTS	CORE COHORT TEACHERS	LEARNING ASSISTANTS	SPECIALIST TEACHERS	LEADERSHIP		
EARLY YEARS	EY2-3	EY2	10	2	2	1 Thai Language teacher 1 PE teacher 1 Specialist teacher (ie. Chinese)	EY Cohort Leader	Lower Loop Leader	
		EY3	15						
	EY4-5	EY4	15	2	2		C1-2 Cohort Leader		
		EY5	20						
LOWER LOOP	C1-2	Grade 1	24	2	1				
		Grade 2	24						
	C3-4	Grade 3	24	2	1			C3-4 Cohort Leader	
		Grade 4	24						
MIDDLE LOOP	C5-6	Grade 5	24	2	.5	1 Thai Language Teacher 1 PE Teacher 3 Specialist teachers (i.e. Design, Chinese, etc.)	C5-6 Cohort Leader	Middle Loop Leader	
		Grade 6	24						
	C7-8	Grade 7	24	2	.5		C7-8 Cohort Leader		
		Grade 8	24						

Figure 18. Staffing model for 200 students.

Table 13

Student Numbers for AY 2020-2021

Class	Male	Female	Total
Early Years 2	3	7	10
Early Years 3	4	4	8
Early Years 4	10	2	12
Early Years 5	10	7	17
Grade 1	10	3	13
Grade 2	13	9	22
Grade 3	5	9	14
Grade 4	7	2	9
Grade 5	5	10	15
Grade 6	5	13	18
Grade 7	4	9	13
Grade 8	9	5	14
Grade 9	1	5	6
Totals	86	85	171

As the Namjai campaign continued to appeal to families, most enrolled students held Thai passports. A breakdown of the nationalities (see Figure 19) presented shows most students holding at least one Thai passport. Over 84% of the student population held a Thai passport. In international schools, passport breakdown is often not enough to determine the “internationalness” of the school community. International students who hold local passports often have experience living overseas or attending other international schools. Interestingly, although 28% of students possessed passports from countries other than Thailand, few had experience living overseas. The absence of globally minded families may be attributable to the pandemic's impact on international job relocations and conducting more business using remote meetings. The 16% of non-Thai students were composed of other Asian nationalities and staff children.

As we transitioned into the 2020-2021 academic year, NOVUS grappled with demographic shifts that were not originally anticipated during the planning phase. First, the staffing model was designed for 200 students, evenly distributed across the grade levels. Secondly, the marketing and admissions efforts were insufficient to combat the challenges of opening a new school in a competitive market during COVID-19, as the target number of 200 was unmet. Next, the Namjai campaign to increase enrollment significantly changed the community's demographics, of which NOVUS did not have the structures of support to meet the language and cultural needs. Lastly, the majority of Thai students significantly changed the culture of the community, which posed a challenge for the original plans for a globally-minded international school. Despite these shifts, the planning made during the preparatory year had to cater to these needs, as I explore further in the subsequent chapter.

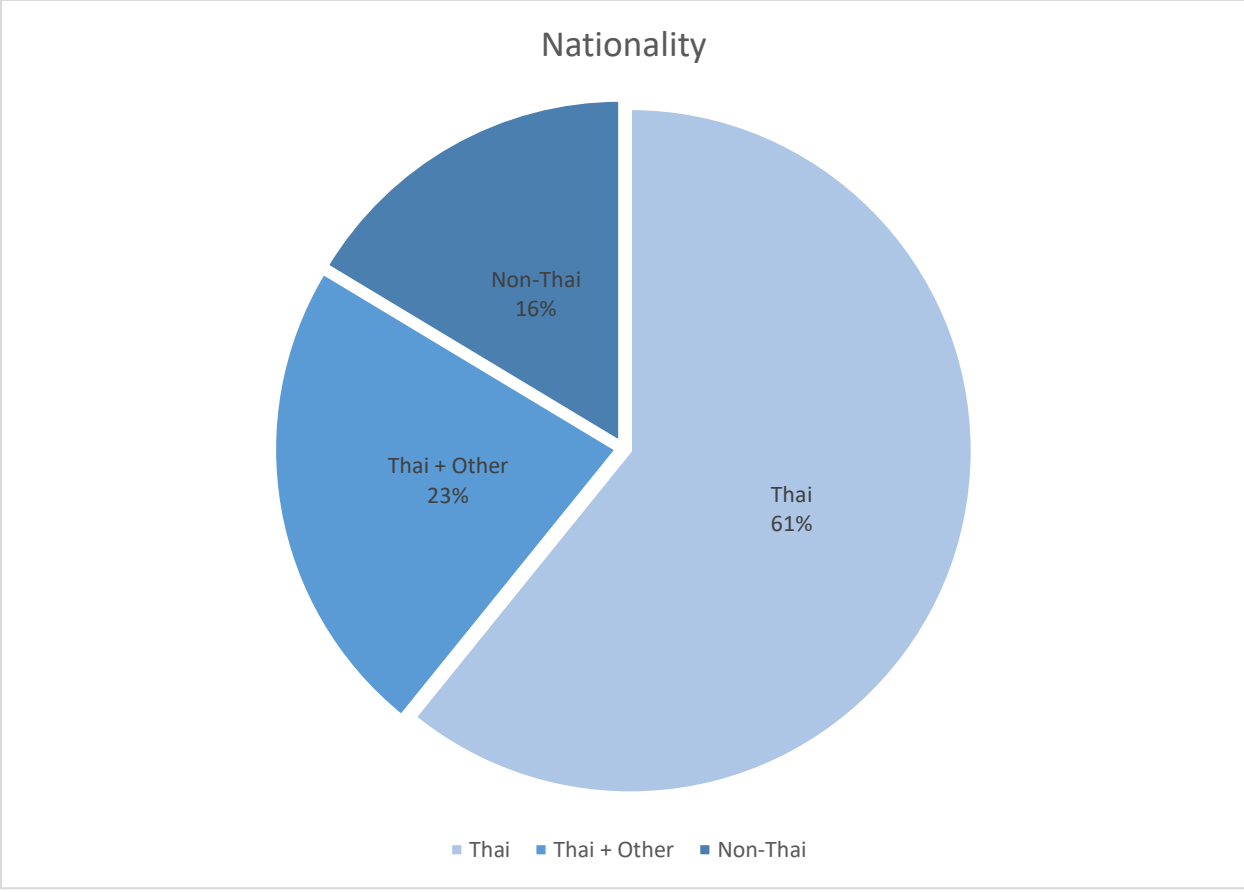


Figure 19. Nationalities represented in AY 2020-2021.

Conclusion

In Chapter 5, I offer an in-depth synopsis of the contextual framework of NOVUS International School. In describing the educational landscape in Thailand, with particular emphasis on international schools, I provided a comprehensive historical account of NOVUS International School. I articulated the core tenets and the "NOVUS DNA." I presented the distinctive and deliberately constructed characteristics of the NOVUS model, which were devised based on the NOVUS DNA. I provided profiles of the inaugural Learning Design Team members, who were the focal subjects of the case study. I culminate the chapter by summarizing the school at its opening in August 2020, denoting the conclusion of the preparatory stage and the onset of the application of the NOVUS model.

With the inauguration of the school, a myriad of complications surfaced. These included the difficulties associated with operating without a complete student body and the absence of necessary infrastructures for teaching resources. Furthermore, unanticipated issues arose regarding the curriculum and teaching methods centered on creativity, which juxtaposed governmental, organizational, and parental expectations. The leadership team and educators found their abilities put to the test in dealing with these situations. A more in-depth exploration of these tensions is discussed in the ensuing chapter.

CHAPTER 6: A CASE STUDY OF NOVUS INTERNATIONAL SCHOOL

The school of the future will be a place where creativity and innovation are valued as much as academic achievement. Sir Ken Robinson

From its inception, the founders intended NOVUS International School to become a school that lived creativity and innovation, as described by Sir Ken Robinson. Because most schools have clear standards and curricula that drive the school system and student learning, creativity and innovation are too often regulated to individual classrooms, which Lortie (1975) called an “egg crate” mentality. The "egg crate" mentality can create a culture where teachers work in isolation, planning and teaching their lessons with minimal interaction, collaboration, or shared practice with their peers. The private integration of creativity and innovation does not lead to a systemwide change in traditions or the grammar of schooling (Tyack & Cuban, 1997). Yet, there is a constant press to alter the outdated school model. The call for change occurred before the COVID-19 pandemic, but the pressure accelerated as a response to the pandemic. As previously outlined in Chapter 4, international schools have been experimenting with different approaches to schooling to foster creative thinking skills in their students. The reasons range from improving student achievement to teacher well-being or market pressures to raise enrollment. NOVUS International School’s plan incorporated all these objectives. NOVUS aimed to be innovative while being academically competitive and viable, something international schools have not yet successfully modeled.

Although the optimal educational framework for fostering creativity and other essential skills remains undefined, the NOVUS Design Team explicitly recruited initial team members to outline the parameters before the school's inauguration in August 2020 in Bangkok. Figure 20 serves as a visual representation of NOVUS International School's objectives.

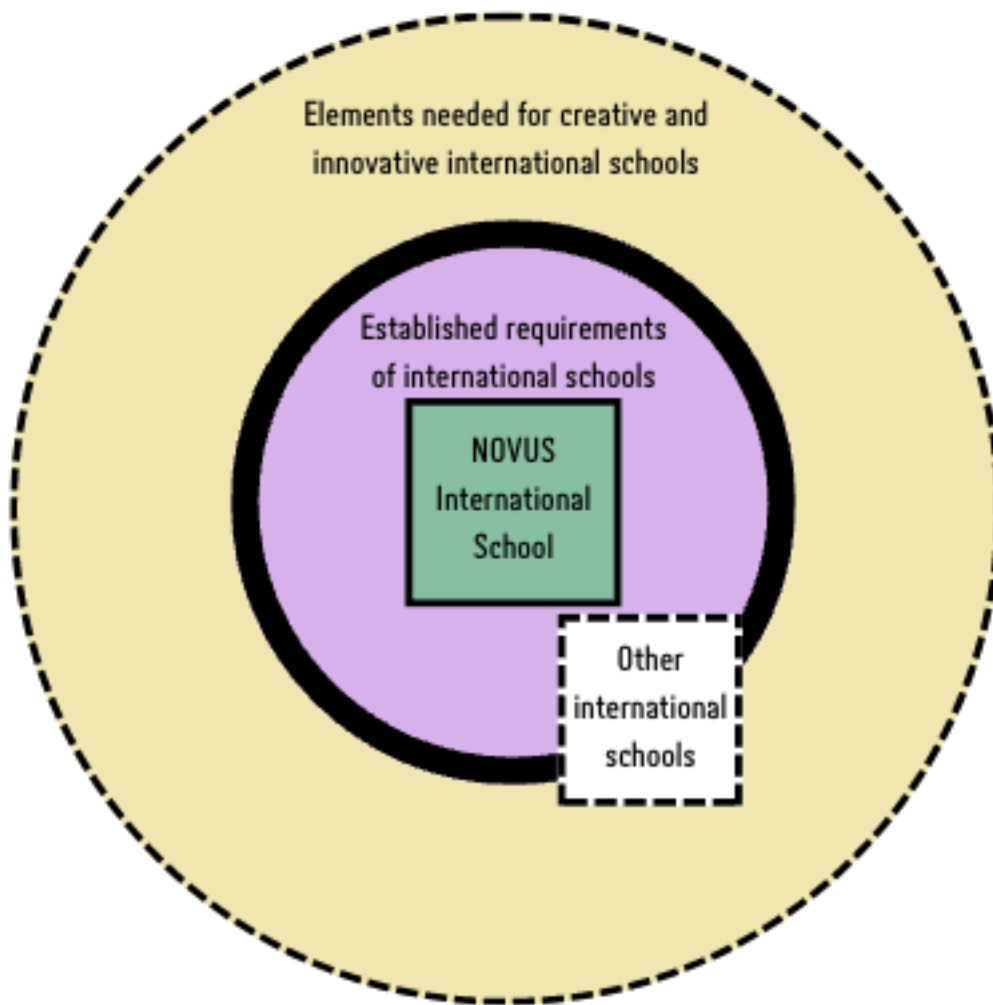


Figure 20. Visual of NOVUS International School's objectives.

In this depiction, the yellow circle symbolizes the elements of an inventive and imaginative educational institution. At the same time, the dotted line conveys the absence of an established foundation based on research, practice, or policies. Conversely, the purple circle represents the external prerequisites and established standards associated with international schools. NOVUS sought to position itself firmly within both realms by adhering to established criteria while simultaneously forging a pioneering educational model from scratch. As outlined in the results presented in Chapter 4, most international schools actively strive to embrace innovation and deviate from conventional approaches. However, as pre-existing models and host country regulations bind them, other international schools vary in the degree to which they address the need for creativity and innovation. I alter the figure throughout the chapter as I describe conclusions based on analysis from NOVUS International School.

In the preceding chapter, I presented an overview of the NOVUS context, outlining the composition of the team and the process undertaken to develop an innovative and creative educational model. I delve deeper into the subject matter in this chapter by providing an in-depth NOVUS International School case study. The case study draws upon primary sources, including insights from the planning team and documents, to comprehensively detail the challenges and assets encountered throughout NOVUS's conception and opening. As a design team member, I was a participant observer, and I chronologically present the case study in three sections to facilitate a coherent narrative. Firstly, I examine the founding Learning Design Team and the initial obstacles they encountered. Subsequently, the focus shifts to an exploration of the external constraints that were uncovered by the team. Finally, I conclude the chapter with a detailed description of the events that transpired when the school officially opened its doors to students in August 2020 (see Figure 21, which provides a road map of the chapter, including the findings of

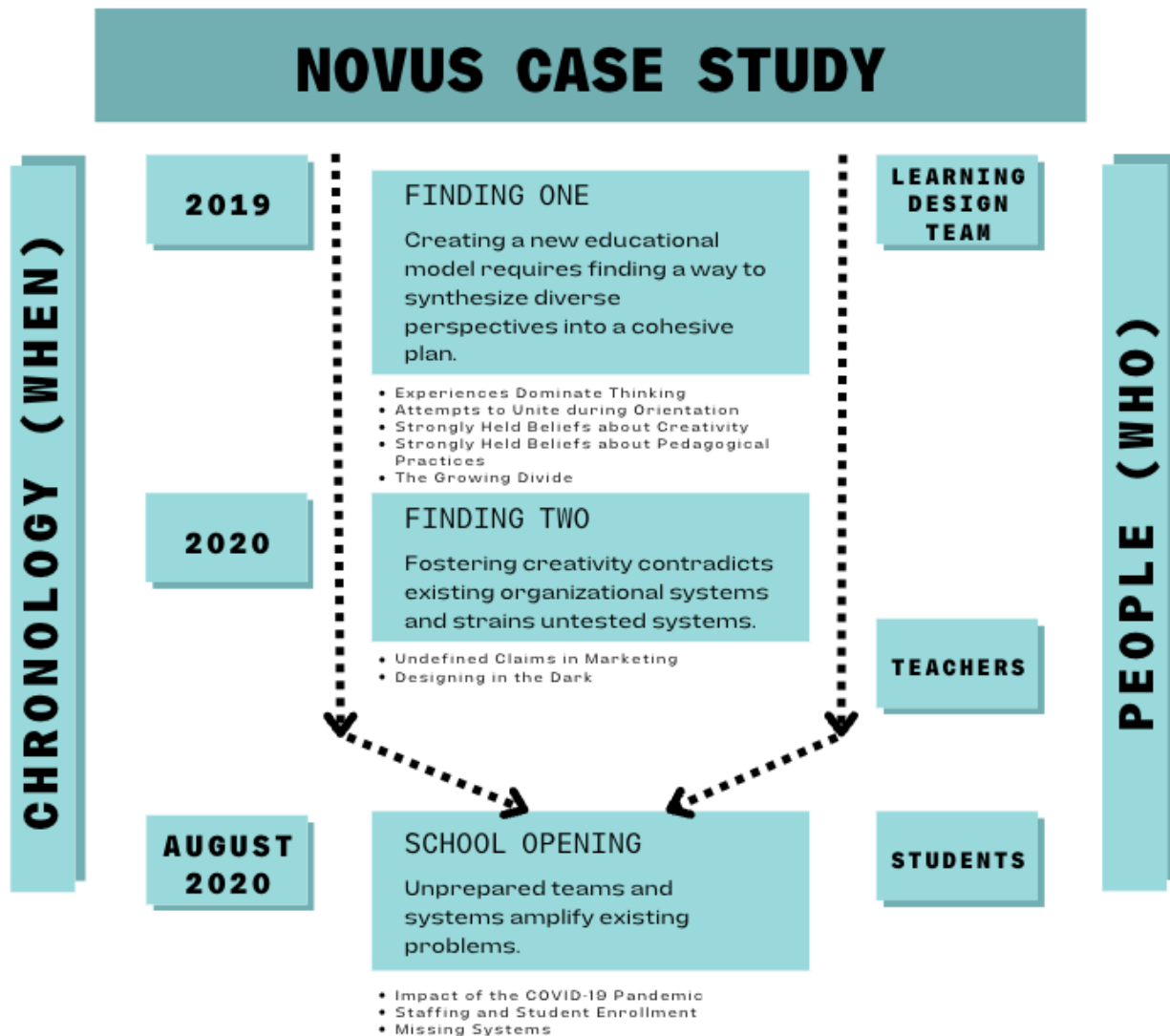


Figure 21. Overview of NOVUS case study.

case study). The primary objective of this chapter is to chronicle the narrative of the NOVUS school, with a specific emphasis on significant themes to expand upon the foundation established in the previous chapter. I conclude the chapter with an account of the experience from the planning efforts, specifically reporting on the opening of the school in August 2020.

A Team by Name Only

In this section, I discuss the experiences of the founding Learning Design Team in the first phase of school development (August 2019 to August 2020). The Learning Design Team consisted of twelve international school educators, as described in Chapter 5, brought together to “design and deliver a forward-thinking learning program aligned to the NOVUS philosophy,” as outlined in the job description. During the planning year, the job description identified the following tasks for the founding team:

- Work within the Design Teams of the Lower Loop (K- 4) and Middle Loop (5-8).
And work across the K-8 group to consolidate, review and refine the Macro Curriculum.
- Explore the 5 Learning Experience models for NOVUS and plan for these opportunities in the school and within the community by identifying partnerships and applied learning opportunities.
- Create a learning sequence of transdisciplinary units for each cohort
- Develop an innovative program schedule that blends core and project-based learning.
- Work with the Admissions Designer to create and deliver prospective parent workshops and marketing material.
- Support the design and implementation of the feedback / reporting strategy

- Support the identification of and purchasing of resources to implement the program

While “team” was used to describe the group, true collaboration to create a new educational model proved challenging. I further explore that complexity in this section.

During the first phase, the team convened in an open office setting at a hotel close to the NOVUS campus, named the Project Studio, while construction activities were underway at the school site. Originally a storage area for the hotel, we met in an office repurposed to accommodate the needs of the Learning Design Team, fostering a conducive environment for collaborative discussions and work. The office space was strategically divided into three zones: a designated meeting area for the Learning Design Team, cubicles allocated to the operations staff, including departments such as finance and human resources, and a dedicated space for the admissions team to meet prospective parents.

Despite the shared belief in the need for change and the expectation to define the NOVUS school model by August 2020, the team members' diverse ideas did not easily coalesce into a unified vision. Next, I detail the challenge and complexity of creating a new educational model without finding a way to synthesize diverse perspectives into a cohesive plan. First, past experiences dominated perspectives and thinking about the design. As we engaged in an orientation, we attempted to unify. However, as we continued to meet, firmly held beliefs about creativity and best teaching practices resulted in differences and a growing divide about how to proceed. Our growing understanding of the external variables – IB standards, WASC requirements, and Thai regulations- also hampered our joint ability to center creativity.

Experiences Dominate Thinking

Initially, we considered the pre-established relationships and diverse experiences advantageous to the project. However, individual experiences and beliefs that converged in

August 2019 to form the founding team began to dominate our discussions. The founding team members brought a rich range of prior experiences in international schools, as discussed in detail in Chapter 5, and relied on the general international school approach to creativity – that it must respond to each unique institutional context. Figure 22 visually represents the situation during this first phase, with an added layer of individual beliefs complicating the objective to define an innovative NOVUS International School model within the constraints of established requirements. In August 2019, the LDT (Learning Design Team) needed to define our approach concretely. The small squares illustrate the individual LDT members, each with unique approaches and beliefs about achieving educational reform. The diagram does not portray the individuals as a collective entity; instead, they are represented as separate entities.

The first significant discrepancy among the LDT members related to familiarity with the International Baccalaureate (IB) Primary Years Programme (PYP) model. Five team members previously worked in PYP schools before joining the NOVUS project. PYP schools typically prioritize creativity, as underscored by the IB Learner Profile. However, the accreditation process and the association with the secondary school IB program restrict innovation, whereas there is more flexibility in the elementary school grades. As part of the accreditation process, teachers in PYP institutions must receive training in PYP-approved methodologies. Moreover, all PYP schools consistently adhere to six transdisciplinary themes to structure their learning units. Consequently, when teachers and students transition between schools, they often seek out other PYP institutions to maintain familiarity with the established educational framework. Prior experience with the PYP model created a point of divergence within the Learning Design Team, impacting the development of the NOVUS team.

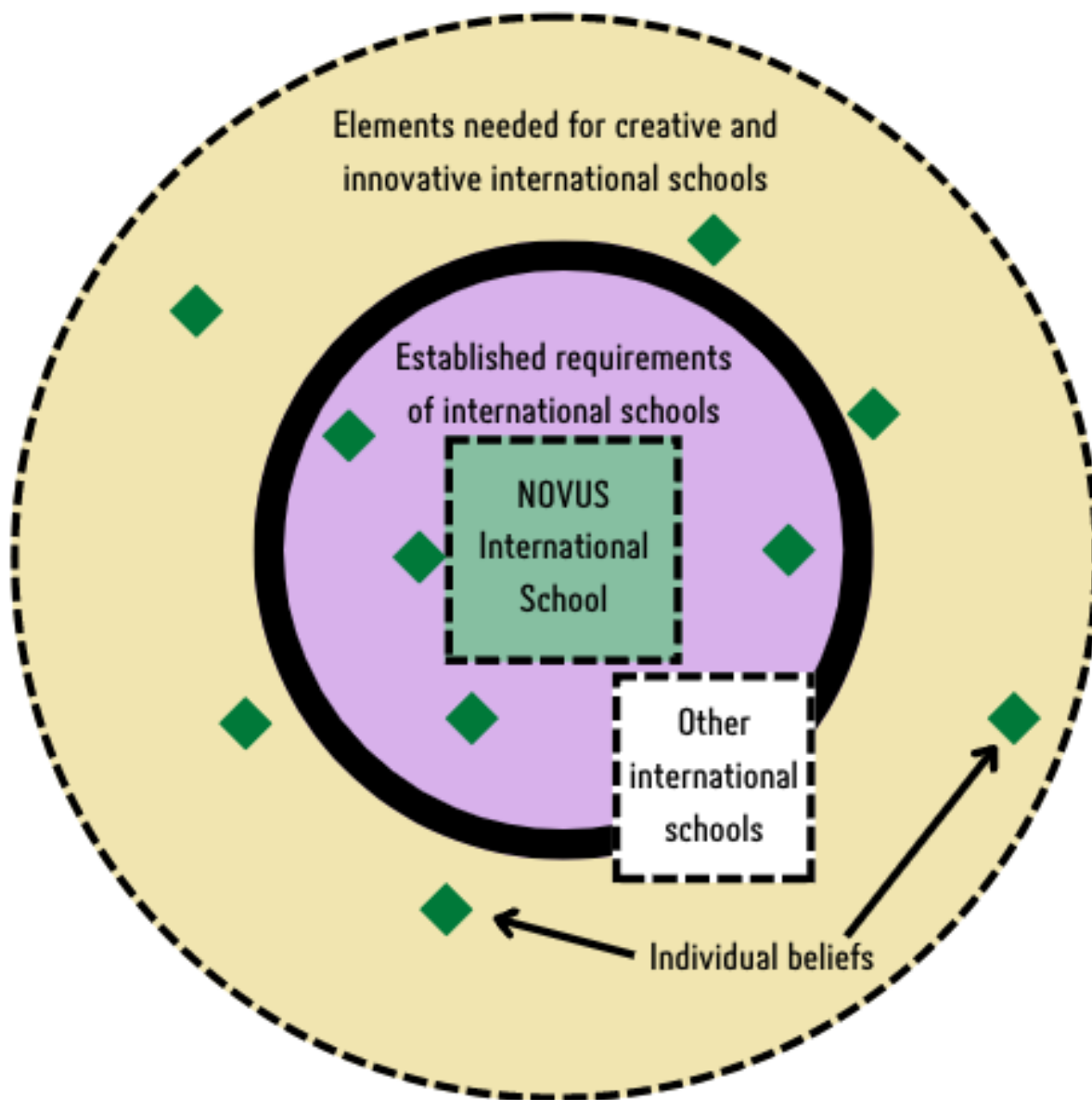


Figure 22. Visual of NOVUS International School with the founding team.

Another point of divergence among the team members pertained to our familiarity with the American curriculum. Seven of the twelve members had previously worked in schools that adopted the Common Core State Standards. However, international schools that incorporate American standards may interpret and implement them differently. Some schools closely adhere to the standards to ensure a seamless transition for American students into U.S.-based schools, minimizing disruption to their education. These schools may utilize textbooks and programs that closely resemble those employed in the United States. On the other hand, other institutions have a more flexible approach, incorporating content area standards that align better with their specific context. From an early stage, NOVUS adopted the New York State Standards across all subject areas, and the founding LDT needed to determine how we would utilize the standards in designing the curriculum.

Previous involvement in various progressive educational models constituted important prior experience in creative models, but concurrently influenced the divergent individual philosophies of the members. For instance, two team members played instrumental roles in developing the Studio 5 program at the International School of Ho Chi Minh City in Vietnam. This innovative program, designed for fifth-grade students within the PYP framework, entailed a complete overhaul of the schedule, learning spaces, and unit design to create a more student-centered and inquiry-based educational experience. Another team member had prior experience at the Nueva School, a high school in San Mateo, California, renowned for its emphasis on design thinking and social-emotional learning. Tailored to gifted learners, Nueva School employs project-based learning and prioritizes self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. Additionally, one team member had experience at a United World College (UWC) institution, which operates 18 schools and

colleges globally, all committed to promoting diversity and addressing community-specific issues. Another educator on the team came from a school with a strong focus on outdoor education, where she designed learning experiences utilizing the immediate environment. While these experiences aligned with NOVUS's overall goals, and the team members were hired for their contributions to other progressive programs, leadership roles and participation in the initial development of these models varied. Many initial ideas for NOVUS were adaptations of previous programs without fully considering the unique context of NOVUS, which sought to establish a new international school in an already competitive market.

Another contributing variation was our diverse experiences with the Western Association of Schools and Colleges (WASC) accreditation process. While all team members had previous experience working in accredited institutions, our level of involvement in the accreditation process varied considerably. The organization of the WASC self-study process within a school is contingent upon the accreditation coordinator and can engage teachers and school leaders in different capacities. The accreditation process requires schools to provide compelling evidence to substantiate each finding and recommendation. However, no team members participated in the initial accreditation process at our respective schools. Consequently, each member attributed varying degrees of significance to the WASC accreditation and interpreted the evaluation criteria differently. The diversity of perspectives significantly influenced the work conducted during the initial phases of developing the NOVUS school model.

A final factor influencing the founding team's work during the pre-opening phase of the NOVUS project was the pre-existing working and personal relationships among team members, outlined in the previous chapter. Three members, including the founding Head of School, had previously worked together in Hong Kong under the same investors. Another group of three had

collaborated in past professional contexts and were close enough to choose to live in the same community. Pacifica and Katella, who were married, had spent the previous year working with Magnolia on the NOVUS project in Bangkok. My relationships with Pacifica and Katella were established through professional networking in Japan. Of particular note, two team members had no prior relationships with anyone else. These pre-existing connections and the varying degrees of familiarity among team members added another layer of complexity to the team's development, as personal and professional dynamics inevitably influenced the collaborative process.

Attempts to Unite During Orientation Week

During the initial orientation day, the team went to the construction site to view the progress made on the school buildings. The campus was still undergoing extensive construction, with only the primary structures' exterior walls having been erected (see Figure 23). The absence of landscaping and the presence of scaffolding and construction equipment indicated ongoing construction activities. As a result, the LDT and the admissions, marketing, human resources, accounting, IT, and procurement teams operated from the Project Studio space. The experience proved valuable as it gave us a comprehensive understanding of the project's scale and allowed us to visualize the learning spaces.

However, a more organized and comprehensive orientation program is crucial in onboarding leaders and teachers at an international school and can contribute significantly to team cohesion. Typically, in such a program, new members familiarize themselves with the school's culture, policies, and procedures. However, since the establishment of these elements was still in progress at NOVUS, the NOVUS DNA document that communicated the



Figure 23. NOVUS International School in August 2019.

overarching vision was shared with most but not all LDT members. Instead of an orientation process focused on the school, the Learning Design Team engaged in experiences that facilitated our understanding of the local context, cultural norms, and expectations, pivotal for establishing positive relationships with students, colleagues, and the wider community. As a new school, we focused on developing team norms and culture since we had no pre-existing orientation program. A pair of consultants from Tropic, an offshoot created by two of the original IDEO members who had worked on Project Sunscreen, facilitated the process. The first week of August 2019 was dedicated to unifying the team and exploring aspects of the design process.

During the initial week of the orientation program, the team engaged in an activity to identify shared values. This involved a process of elimination, starting with 30 values represented on individual cards. Through discussions, we worked towards establishing a shared understanding and agreement on the selected values. Connecting our collective stated values with NOVUS's established pillars and mindsets may have further enhanced the outcomes of the exercise. At this stage, the team was still in the early stages of formation, and we felt uncomfortable engaging in the meaningful dialogue and healthy debates necessary for determining common values. Additional activities were engaging but ineffective in defining our unique perspectives on creativity and building a unified team.

Another activity during the orientation week involved pairs of team members exploring Bangkok, practicing observation skills, and identifying potential connections for future partnerships and excursions. The activity aimed to enhance our skills in collecting observations and conducting interviews, which are integral to the design process. We visited various locations in pairs, such as landmarks, restaurants, and co-working spaces. My group investigated the On Nut neighborhood and discovered an eco-café and refill station that served as a neighborhood

hub for waste reduction. We had the opportunity to connect with the owner and interact with individuals using the café as a workspace. After the exploration activity, the team regrouped to share our experiences and insights. However, since each group interpreted the assignment differently, the intended purpose of fostering an understanding of the design process could have been more effectively served. Although exploring outside of NOVUS was valuable in familiarizing ourselves with Bangkok and facilitating social connections through shared experiences in pairs, members did not perceive the exercise as beneficial to our overall goals.

During the week, the group collected ideas regarding traditional aspects of schools that we believed needed re-examination and change. The collective brainstorming session resulted in documented ideas exhibited in the Project Studio for several months. However, similar to the values activity, the team did not reference or utilize ideas gathered beyond the initial discussion.

Several factors could have improved the effectiveness of the orientation week in inspiring and unifying the team. The departure of the consultants from the Project Studio marked the end of the follow-up process, leading to neglect of the selected values and the brainstormed ideas. Sustained discussions and rituals centered on the identified values could have fostered team cohesion. Additionally, condensing the brainstormed ideas into a concise list of non-negotiables would have guided the planning work and facilitated greater alignment among team members, especially as we began working in smaller groups. Ultimately, the lack of follow-up measures constrained the orientation week's potential to bring the team together successfully. As we progressed, we continued to explore our individual beliefs about creativity and pedagogy from prior experiences.

Strongly Held Beliefs About Creativity

In December 2019, I conducted individual interviews with the team members, which I transcribed and analyzed using coding techniques. As with the themes derived from the worldwide questionnaire, I observed inconsistencies in definitions of creativity. Considering that these interviews took place after four months of collaboration, the absence of strong common themes suggests that the team needed alignment in our beliefs regarding the definition of creativity. The lack of consensus further complicated the development of a unified vision for the NOVUS school model.

Based on the collective interview data, creativity involves perceiving the world differently and envisioning possibilities for change. Analyzing the data from Table 14, the "novelty" category was mentioned six times. Most interviewees defined creativity as an acquired skill that could be fostered in schools. Two individuals referred to it as a "disposition," while another described it as a "mindset." One interviewee characterized creativity as a disposition that must be nurtured and developed, akin to a muscle, through daily routines and minor adjustments. The interview data indicate that most of the team believed action to be an essential aspect of the creative process, with creativity extending beyond art-related activities. However, creativity was only partially associated with generating a novel product; respondents also mentioned that it could involve discovering new ways of accomplishing tasks or adapting existing methods. Consequently, the team believed creativity encompasses the process and outcome of devising innovative and original ideas and solutions.

An intriguing observation from the interviews was the minimal reference to the NOVUS DNA, intended to guide the team's work in developing the NOVUS curricular model. Only one

Table 14

Individual Definitions of Creativity

Categories	Frequency of Codes
Novelty	Building on existing ideas – 3 Different perspective – 2 Original – 1
Innovation	Creating or producing something – 3 Adding value – 3 Innovation – 2 Change – 1 Challenging status quo – 1
Creativity as a process	Human centered design – 1 Messy and chaotic – 1
Acquired Skill	Combination of nature and nurture – 1 Developable skill – 4
Criteria for Creativity	Requires action – 2 Authentic audience – 1 Connects to context/audience – 1 Evokes emotion – 1 Freedom of expression – 1 Individualized – 1 Metacognition – 1 Multiple ways of being creative – 1 Not discipline specific – 1 Transfer across multiple contexts – 1
Related Skills	Problem solving – 7 Critical thinking – 1 “utilizing dormant skills” – 1
Personal Quality or Mindset	Perseverance – 2 Disposition – 1 Positive – 1 Inventive – 1

person mentioned this aspect during the interviews. When asked whether NOVUS had a shared definition of creativity, one participant replied:

I don't think we have a definition of creativity. Maybe it's within our three pillars of having kids have the confidence to lead their own journey. But I don't think that necessarily equates to creativity. I think it's maybe embedded in our mindsets. Curious to explore ways that they can cultivate creativity but not a definition. (Adams, personal communication, December, 2019)

Among the six interviews, this statement was the sole direct reference to the NOVUS Mindsets established by IDEO to serve as the foundation for learning, highlighting the potential disconnect between the guiding principles of NOVUS and the team members' perspectives on creativity.

The quote is intriguing for another reason, as it suggests that the lack of a common definition among the team might be a cause or consequence of the divisions within the group. As individuals, we had different understandings of creativity, which contributed to confusion and misunderstanding during the communication and collaboration process. A shared understanding of how creativity can be developed is crucial for effectively working together toward a common goal. However, the interviewees expressed optimism. One person assumed that the team members likely had similar definitions: "We all are thinking the same thing, but I think that if we were all to articulate it, we'd give it a little spin or variation" (Magnolia, personal communication, December, 2019). Another interviewee focused on the conditions necessary for creativity and referred to the work that supports their creative efforts. He stated:

I think we provide time and space. I think we're OK with working on something for a long period of time and then throwing it away. Like these prototypes, there's a lot of creativity that comes in. Some of the things that we've done this year really help exercise

those creative muscles. Just being around people who have different points of view. But I don't think we have that shared definition. We have a shared understanding of the power of it. (Newland, personal communication, December, 2019)

Most people acknowledged the need to discuss and moderate the fostering of creativity with learners effectively. However, one individual held a strong opinion against having a standard definition, stating:

I don't like common definitions in anything. I really hate the idea that everything can be standardized. What we have to create is a school where creativity has an evolving understanding, that it's deeply embedded in the school. We're a curious school. It's an ecosystem, not everything. (Canberra, personal communication, December, 2019).

He suggested that a shared understanding might constrain the creativity of the work. In his perspective, creativity is an underlying foundation for the interactions between learners and teachers:

It's not about the fancy art projects. It's about the way that you see kids and teachers working together in pursuing inquiry and pursuing curiosity and questions and digging deep and not being afraid to come up with ideas and build on them" (Canberra, personal communication, December, 2019).

In contradiction to colleagues who thought we could maintain diverse ideas of creativity, I believed that a shared understanding was necessary; the need for more attention to some agreement was a sticking point as we moved forward. I rely on Dewey's (1938) criteria experience and how to create experiences that have continuity and provide a structure that offers a space for freedom and creativity. The same difference of opinion prevailed concerning pedagogy.

Strongly Held Beliefs About Pedagogical Practices

When asked about the pedagogy to support creativity at NOVUS, project-based learning and design thinking emerged as the most common response on best addressing student creativity. Table 15 reveals that project-based learning and design thinking were prominently mentioned in the interview transcripts and the produced artifacts during the relevant period. According to the interviewees, project-based learning (PBL) enables students to explore, create, and solve real-world problems, nurturing their creative thinking abilities collaboratively and engagingly. However, while participants referenced project-based learning six times in the interviews, PBL only manifested twice in the tangible artifacts. Despite some team members strongly endorsing PBL as a pedagogical tenet, the concepts failed to materialize in the final products. This discrepancy implies a potential mismatch between individual ideation and the collective output, which may stem from unequal contribution to the work or a need for more alignment between ideas and the eventual outcome.

Additionally, design thinking emerged as a recognized and effective methodology for cultivating creativity, encouraging students to engage in user empathy, problem identification, idea generation, prototyping, and solution testing. Following a structured process, students refine their ideas and devise innovative solutions to intricate problems. Notably, design thinking exhibits a higher occurrence of codes in the artifacts category ($n=4$) than in interviews ($n=1$). This indicates that design thinking was more prevalent and actively discussed in the artifacts, which included visual materials for prospective parents and sample timetables. Similar to the disparity between the beliefs expressed in the interviews and the artifacts concerning project-based learning, the evidence underscores how artifacts produced during the planning phase did not fully capture team members' diverse individual perspectives.

Table 15

Codes about Pedagogical Practices for Creativity

Codes	Artifacts	Interviews	Total
project-based learning	2	6	8
Design Thinking	4	1	5
Interdisciplinary	2	3	5
Personalized Learning	2	0	2
Play	0	2	2
Developmentally appropriate	0	1	1
Inquiry	1	0	1
Self-guidance	1	0	1
Teacher collaboration	1	0	1

In addition to project-based learning and design thinking, LDT members emphasize an interdisciplinary approach as a critical factor in addressing NOVUS students' creativity with evidence from the artifacts category (n=3) and interviews (n=2). The interviewees noted that students can better understand real-world problems and innovative solutions by integrating disciplines like art, science, and technology. An interdisciplinary approach fosters collaboration and communication skills, essential for working in a diverse and dynamic environment. By bringing together different perspectives, students are encouraged to think critically and creatively, which enables them to approach problems more innovatively and flexibly. Personalized learning is featured in the artifacts twice, yet not a single participant mentioned it during the interviews as an essential condition for fostering creativity. Team members needed more consensus regarding project-based learning and design thinking. While the team collectively recognized the significance of innovation and creativity, we also required more shared thinking and common perspectives.

Growing Differences

As the interview data suggest, the team needed more time and discussions to converge our experiences, definitions of creativity, and pedagogical approaches. In addition, during orientation, since we did not fully consolidate individual beliefs and experiences into a single purpose for NOVUS, that affected our interactions as the campus opened, and the COVID-19 pandemic forced the team to shift to remote work.

After Orientation Week

To address the differences in opinion and further develop our work as a team, we attempted to align individual ideas and define the NOVUS curriculum and approach to teaching

and learning. However, as we encountered unavoidable circumstances, we did not fully resolve some basic differences.

During August 2019, team members engaged in individual research on various topics, including other school models and research on future readiness. However, this approach proved ineffective, leading to the establishment of regular team meetings to share individual progress. Lacking a facilitator or protocol for these meetings, the meetings devolved into aimless discussions about broad concepts without clearly defined next steps. Consequently, decision-making needed more clarity as team members required clarification on the leadership structure. The senior leadership team had been established, but some team members believed we had a flat leadership structure.

Following the unproductive period of individual research, the NOVUS team recognized the need to enhance productivity. Consequently, the focus shifted to creating tangible outputs such as policy documents, visuals, and sample learning units. To this end, we adopted a shared task list, with designated individuals assigned to specific tasks. People began to spend their time making involved prototypes, investing time and energy into a single model. The design thinking process explicitly states the importance of rough prototypes to make needed pivots easier and with less emotional attachment to an idea. The team used meetings to share progress and determine the next steps. In meetings, each person presented their work and asked for feedback on their product. We should have followed up by asking provoking questions or connecting with other work. However, team differences did not support a climate of healthy questioning and feedback. Despite these measures to increase productivity, there needed to be more emphasis on ensuring that the outputs aligned with the core objective of preparing for the enrollment of

students in August 2020. In addition, much time was devoted to marketing and preparing presentations for prospective families, diverting the team's focus.

Project Studio to Moving to Campus

We moved to campus in February 2019 after working in the Project Studio for six months. Unlike the single working space in the Project Studio, the larger campus provided ample room for individuals to work together in groups. However, moving to campus had the opposite effect in which we began to work more in isolation. Meetings decreased in frequency as they were no longer perceived as beneficial to the team's progress. At this point, tensions among the team members impeded decision-making and finalizing plans. To establish clear priorities for the 100 days leading up to the opening in August, the divisional leaders convened and created a comprehensive to-do list called "Project 100." Figure 24 is a photo from an anonymous check-in using a spectrum. The exercise was intended to determine how to address the tensions productively. While most responses were in the middle, one person (green) is optimistic, while another (left and blue) is not hopeful. However, we did not use these data to address the dysfunctions that were beginning to emerge.

Remote Work

Due to COVID-19 restrictions in March 2020, the NOVUS team was forced to work from home, which caused further division within the team. Despite having more time available to focus on Project 100 due to the halt in marketing events, isolation deepened the factions and created a lack of community among team members. Furthermore, a lack of support for well-being added to the stress, particularly for those new to Bangkok who had only moved seven months prior.

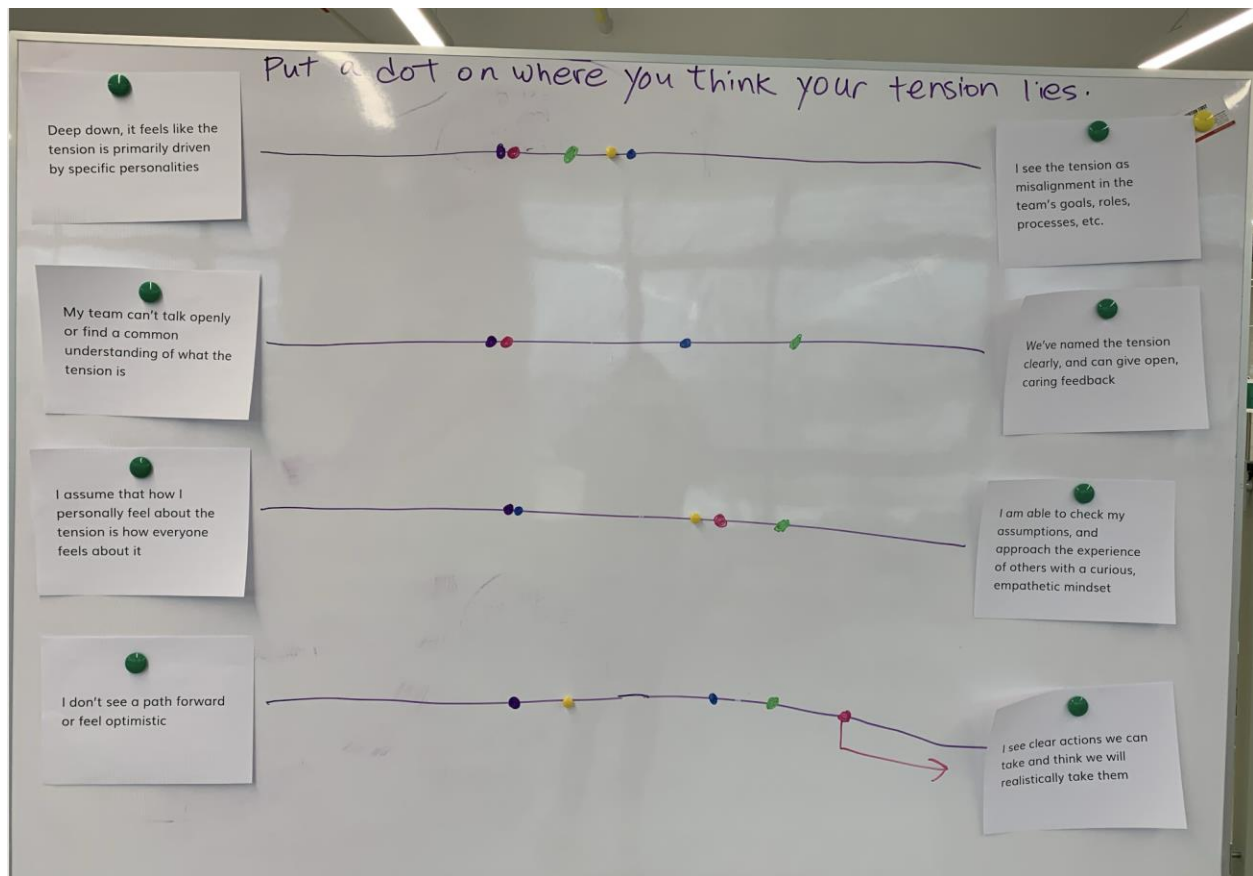


Figure 24. Addressing tensions on the team.

We conducted NOVUS team meetings through Zoom during the remote work period. However, the lack of established norms for virtual meetings resulted in some team members keeping their cameras off and remaining mute for the entire session, citing stress. Since there was no assigned facilitator or set meeting protocols, maintaining effective communication and collaboration was a challenge. In addition, two key team members were stranded in Australia after COVID-19 restrictions were put in place while they were in Indonesia on vacation. Katella was the Lower School Leader, and Pacifica was the HUB Director, both vital leadership positions in this phase. They returned to Bangkok the day students started at the school.

Team Building and Collaboration

In Figure 22, I depict individual beliefs as discrete entities. As the planning year progressed, subgroups began to develop within the team, depicted in Figure 24, which I examined the interview and reflective memo data to determine the team members' beliefs about the conditions required for an effective, creative team.

Based on the results of the coding process depicted in Table 16, I deduced several surprising insights about the conditions needed for an effective and creative team. The most frequently mentioned category in the interviews is a collaborative environment, with 11 mentions. Collaboration is team members' active participation and cooperation in working together towards a shared goal, utilizing diverse perspectives, and leveraging collective knowledge and skills (Amabile, 1997; Sawyer, 2003). Team members strongly emphasized fostering collaboration as a vital condition, and we know that collaboration enhances creativity by facilitating idea generation, increasing the diversity of perspectives, promoting knowledge sharing, and enabling the pooling of resources and expertise (Amabile, 1997; Sawyer, 2003). By fostering a collaborative environment, teams can leverage the collective intelligence of their

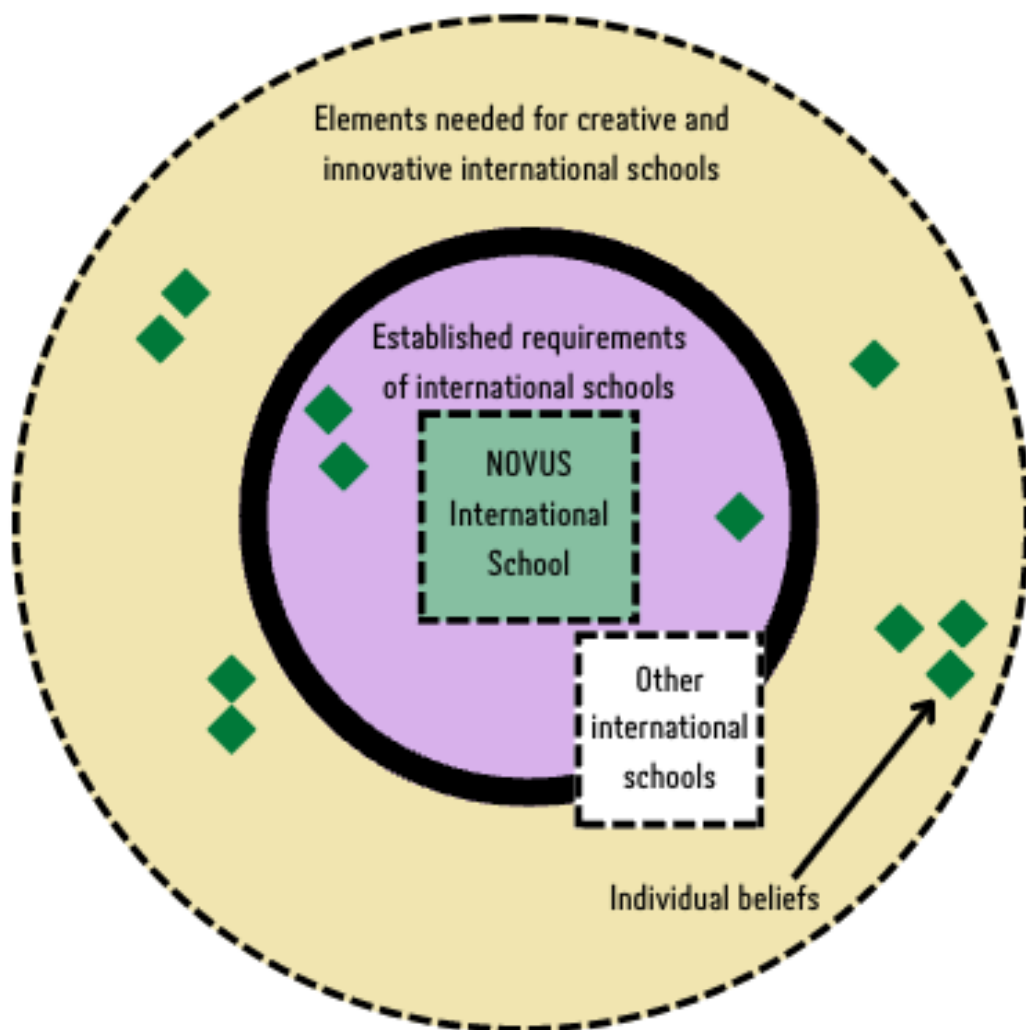


Figure 25. NOVUS International School in March 2020.

Table 16

Totals for Each Category of Team Conditions

Categories	Interviews	Reflective Memos	Total
Collaborative Environment	11	0	11
Diversity	6	0	6
Communication	3	0	3
Creative Team	3	0	3
Emotional safety	2	1	3
Mutual understanding	0	3	3
Openness	3	0	3
Conditions exist	2	0	2
Inspiration + action	0	1	1
Leadership aligned	0	1	1
Total	31	6	37

members and enhance problem-solving abilities, leading to innovative solutions and improved team performance (Amabile, 1997; Sawyer, 2003).

Furthermore, collaboration cultivates a sense of shared ownership and collective responsibility, fostering a supportive and inclusive team culture that nurtures creativity (Amabile, 1997). However, while team members believed in the power of collaboration, the unresolved differences were a challenge to co-creating a collaborative work environment.

The second most frequently mentioned category is diversity (n=6 instances). Diversity encompasses a range of characteristics, such as different perspectives, backgrounds, and skill sets (Jackson et al., 2003). Team members recognized the importance of diversity in perspectives, experiences, and skill sets for enhancing team creativity and effectiveness; diverse groups have the potential to generate more innovative and creative solutions by drawing on a variety of viewpoints and experiences (Eisenbeiss & Knippenberg, 2020; Stahl et al., 2010). As evidenced by the previous sections, the LDT members reflected diverse experiences in international schools. By bringing together individuals with unique perspectives and expertise, diverse teams can engage in more comprehensive problem-solving, challenge conventional thinking, and generate novel ideas (Eisenbeiss & Knippenberg, 2020; Stahl et al., 2010). Exercises during orientation week and subsequent discussions indicated unity in the vision of NOVUS International School to reflect a different school model for students.

However, the team diversity presented challenges. Differences in communication styles and interpretation of the NOVUS vision hindered effective collaboration and information sharing, reducing team cohesion and efficiency. Additionally, we experienced increased conflicts and difficulties in reaching a consensus, as differing perspectives and values led to divergent opinions and disagreements. Addressing conflicts effectively could have improved team

performance, but avoiding hard conversations impeded decision-making. Moreover, diversity can lead to power dynamics and unequal participation challenges, as individuals from marginalized groups may face difficulties voicing their opinions or may experience exclusion (Homan et al., 2015; Nishii, 2013). The lack of individual views represented in the artifacts indicates that this may have been the case.

Effective communication channels and practices likely played a role in facilitating idea-sharing and collaborative problem-solving. As the differences among the team grew, authentic communication became challenging. To increase productivity, the team decided to decrease team meetings and increase the division of tasks. The shift decreased moments of conflict. However, it contributed to the need for more effective communication and misalignment of products, creating a situation where individuals made decisions about the NOVUS School model and curriculum in isolation. We struggled to balance group and individual time, further exacerbating the team's communication problem.

The relatively low frequency of mentions of emotional safety from the interviews suggests that this aspect was not the team's primary focus or concern during the interviews. Emotional safety creates an environment where team members feel comfortable expressing their ideas, taking risks, and being vulnerable. Since I conducted these interviews in December 2019, before the move to the campus and remote work, more attention to emotional safety may have prevented the team from dividing later in the timeline. Surprisingly, the interview discussions did not raise mutual understanding, inspiration paired with action, and aligned leadership as conditions for an effective and creative team. We needed more information regarding the leadership structure and the roles and responsibilities of each team member. The job description

failed to articulate who would report to whom and the team members' roles once the school opened to students. The lack of clarity did not help the team come together.

The team made several attempts to discuss how to improve team dynamics. The divisional leaders led several exercises to understand what the team needed to enhance relationships and maximize productivity. Figure 26 is a photo from a brainstorming session held in December, indicating team members sought more transparent processes and defined roles. There was also mention of ways to improve communication and form shared understandings for the group to make decisions.

These data highlight the need for effective communication strategies, clear roles and responsibilities, and inclusive practices to mitigate potential challenges and harness the full potential of diversity within teams. Systems, such as an organizational chart, clear job descriptions, and meeting protocols, may have supported team development during the planning phase. In the next section, I explore the tensions when the divided team encounters various systems relevant to NOVUS.

Tensions When Creativity Meets Systems

In this chapter section, I delve into the complex dynamics that unfold; fostering creativity contradicts existing organizational systems and strains untested systems. NOVUS strongly emphasized nurturing creativity, and tensions formed as established systems and structures did not align seamlessly with the desired creative environment. The collision between the mission and existing systems created a complex interplay, presenting challenges and opportunities for the Learning Design Team. In this section, I explore the intricate dynamics that emerge when fostering creativity encounters systemic obstacles, shedding light on the underlying tensions and thus hindering the effective management and reconciling these divergent forces. The dark line

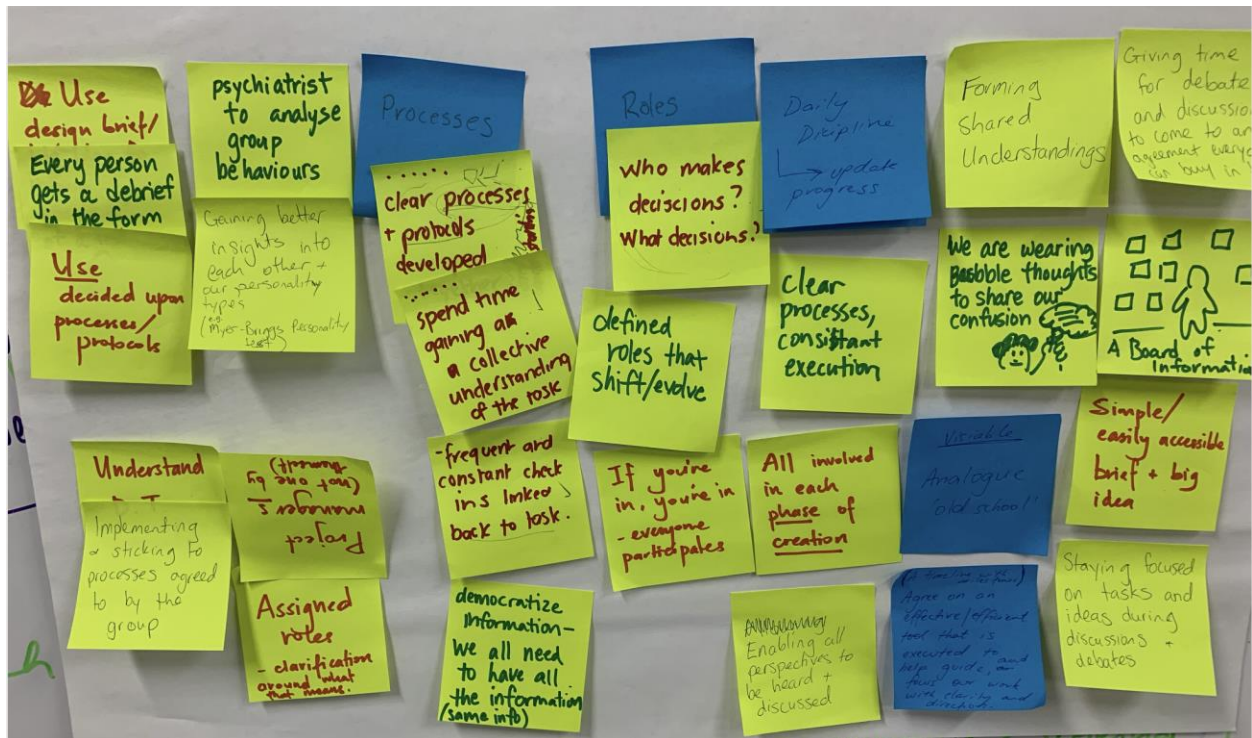


Figure 26. Brainstorming how to improve team dynamics.

outlining the NOVUS International School model in Figure 27 illustrates how the NOVUS model slowly began to take shape as more requirements were uncovered during the planning year. First, I present an overview of the marketing events conducted the preceding year before the campus opened with its inaugural cohort of students. The tension was unknown to the team at the time; however, upon reflection and analysis of the data, this factor emerged as an obstacle. NOVUS International School was marketed as a “new” school model with broad conceptual ideas, influencing the acceptance of external constraints. Second, I examine the external constraints that surfaced during the planning year for the founding Learning Design Team.

Undefined Claims in Marketing

A Marketing Director employed by NOVUS International School managed the marketing process to attract new students. The Marketing Director, who collaborated with an external marketing agency to execute the strategy, planned the marketing campaign starting in September 2020. However, numerous persons had the role of Marketing Director during the planning year and the first two years after the school opened to students, leading to inconsistency. As marketing was crucial in Bangkok’s competitive international school market, the investors hired several agencies to work with the Marketing Director for ad campaigns.

Marketing was a big part of the planning year to secure students for August 2020, and several events took place during this phase. Events included various promotional activities, such as online advertisements, social media campaigns, and virtual open houses. These marketing events aimed to promote the school's innovative learning approach, state-of-the-art facilities, and distinguished faculty. Notably, neither the Marketing Director nor the external agency had prior experience in marketing for educational institutions. As a result, they relied heavily on the LDT

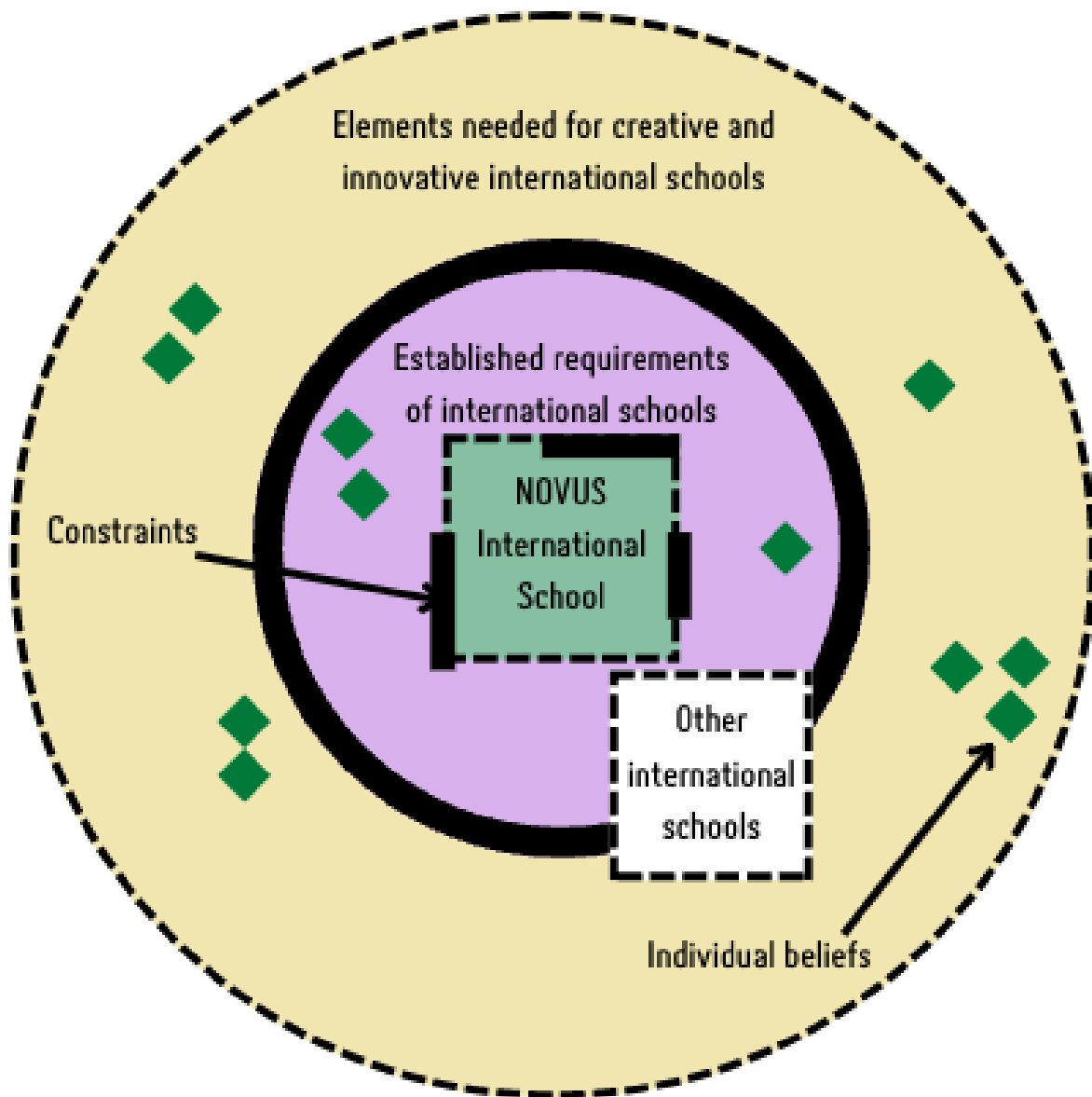


Figure 27. NOVUS International School in May 2020.

for input and to organize the events, creating another point of tension as LDT members had diverse understandings and experiences with marketing.

One initiative that commenced in 2019 was the planning and production of a promotional video for NOVUS. The school had not yet admitted any students, so child actors were employed to feature in the video. The video began with the statement, "We believe that knowing yourself is the beginning for all future visionaries," and concluded with the tagline, "Inspiring Future Visionaries." The video featured various scenes of children engaging in diverse activities -- conducting lab experiments or playing basketball. None of the scenes were filmed in a school setting; instead, they were staged on elaborate sets with dramatic props and lighting to evoke a sense of inspiration and innovation. The LDT received script, messaging, and general storyboard updates for the promotional video. The team reviewed the material and provided feedback to the Marketing Director regarding the suitability and effectiveness of the proposed video.

In September 2019, NOVUS International School launched its marketing campaign with a grand press conference at the St. Regis Hotel in Bangkok, Thailand. Various news outlets and representatives from the two investing groups attended the event. The press conference's primary focus was business, showcasing the 5-billion-baht (\$162 million USD) investment made by BTS Group Holdings Plc. in collaboration with Fortune Hand Ventures Ltd from Hong Kong. The Learning Design Team was present, though the event was primarily intended for the press and business representatives. Beyond our presence, the LDT did not play a role in the event. The event featured the promotional video screening and a video tour of the school's state-of-the-art facilities. The press coverage of the event in the Thai media focused on the impact of the school on Thana City and the investing parties. In a press release, NOVUS International School was

described as a paradigm shift in its physical design and approach to learning, with global design and innovation firm IDEO involved in designing the school blueprint and learning concept.

A second major marketing event for NOVUS International School was a panel discussion on the future of education held on November 3, 2019. The conversation occurred at the Southeast Asia Center (SEAC), an acclaimed center for learning that brands itself as "ASEAN's most innovative and dedicated Lifelong Learning Center." The event commenced with presentations from Sasin University, a prominent graduate business school in Bangkok. The marketing company Ogilvy suggested the inclusion of Sasin University, and they presented research on the future of the workplace and economy in Bangkok and Thailand. Other participants in the panel discussion included a Thai early childhood expert and mother, the founding Head of School, and Dr. Richard Hames, a strategic futurist, mentor, and entrepreneur in Thailand. Dr. Hames, who had personal experience homeschooling his ten children, spoke positively about NOVUS in his presentation. In a reflective memo dated November 4, 2019, I described the event as "all-consuming," highlighting the weeks of planning and preparation that went into its organization. I expressed a desire for more input over presenting NOVUS to prospective families as we had to work with the marketing company's ideas as promises made to prospective families.

Apart from these marketing events, the school organized several parent workshops at the Southeast Asia Center (SEAC). The LDT considered SEAC a more suitable venue than other hotels and conference centers, as it aligned with the ethos of NOVUS. At this juncture, the team had only finalized the core elements of NOVUS's approach to education, which included the learning lab, workshops, one-to-one sessions called conversos, community time, and explore time. Despite much discussion, the details surrounding these elements, such as their planning,

roles, and time allotments, had yet to be consolidated. Figure 28 is an example of how one of the parent workshops was designed around the NOVUS elements of the day.

Due to the COVID-19 pandemic, in-person events were halted in March 2020, prompting the team to conduct online Q&A sessions on Facebook. These online events enabled participants to ask the Learning Design Team questions directly. While well-attended, these efforts minimally impacted student enrollment, indicating that prospective families needed more specific information about the school before enrolling.

Marketing Targets

Early in our work, IDEO identified the type of parents NOVUS should target. As NOVUS attempted to present a refreshing new educational approach, we needed to attract the right people to our school. The market research identified three types of parents or NOVUS: Classic Success Planner, Northstar Shaper, and Future Kid Builder.

The "Classic Success Planner" parents define success as their child graduating from a top university and securing a high-paying, stable career. They strongly believe that hard work and dedication lead to good grades and ultimately guarantee their child's success. This mindset is common among Thai parents who send their children to Thai schools, where academic excellence is valued above all else and non-academic goals may be considered distractions. For these parents, a school's reputation and proven track record of effectiveness are crucial. To change their mindset, we needed to provide circumstances leading them to consider other possibilities and rethink their perspectives on success. We were advised that NOVUS would not be suitable for parents in this category.

The "Northstar Shaper" parents are young, affluent, and modern. They have achieved financial stability and wealth and define success as leading a happy and fulfilling life, hoping

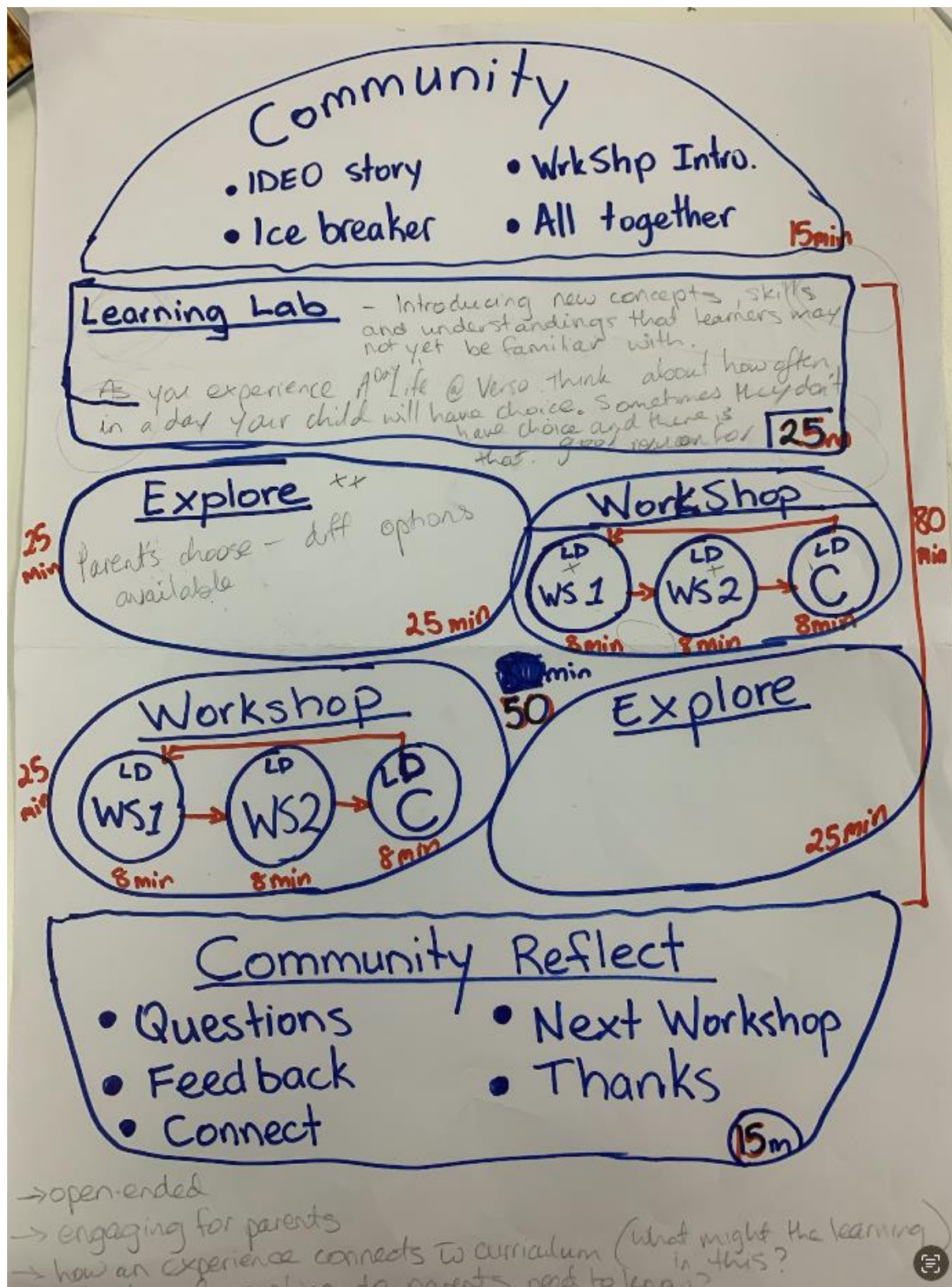


Figure 28. Workshop planning by the Learning Design Team.

their children find their true potential. The Northstar Shaper parents believe that the path to success is nurturing a child's passion and interests, going beyond academic standards, and preparing students with the skills and mindsets necessary to lead their life journeys confidently. These parents are typically young families seeking a pre-kindergarten program, and the marketing strategy should focus on showcasing breakthrough learning experiences that align with their vision of education and ignite their interest in innovative and creative schooling. As their children grow older, these parents may transition to becoming "Future Kids Builders."

"Future Kid Builders" parents have a child-centric mindset. They recognize that children must explore and develop their full potential to excel in the modern world. These parents hope their child's talents lead to something relevant to society, providing financial stability while leading a happy life with a secure job and social acceptance. Future Kid Builder parents define success as their child being accepted into a university of their choice and being equipped to thrive in tomorrow's world with versatility, confidence, and preparedness. They believe schools should provide a well-rounded mix of academics, life skills, and global connections to prepare students for the future. These parents seek a future-ready education that equips their children to be confident and successful. It would be practical to market to this group, reinforcing their preference for skills and mindset beyond mere knowledge.

The Learning Design Team was advised to focus on attracting "Northstar Shaper" and "Future Kid Builder" parents, as both groups typically comprises of financially successful parents with young children.

Marketing Messages

A significant challenge for the Learning Design Team in the Project Studio was how the school was marketed and described to the public. Between August 2019 and June 2020, we

worked to draw students for the first year. We understood recruitment to be critical to the school's viability. However, because the school was described in theoretical terms and broad conceptual ideas, the LDT had to make these broad promises a reality. The team often referred to this as “writing the blurb before the story.”

In coding the various marketing materials, I found dominant themes from the codes and grouped them into several categories, as shown in Table 17. The most frequent categories were outcomes for NOVUS students, methodology, the purpose of school, relationships and community, and NOVUS goals. Fostering advocacy and the teacher’s role in working with students was missing from the NOVUS marketing materials. However, when fielding questions from prospective families, we were most commonly asked about teacher qualifications and how their children would engage with their teacher. The feedback also aligned with the Learning Design Team’s experiences with prospective families at other schools.

The category about the outcomes for NOVUS students emerged prominently in the marketing materials, displaying the highest frequency of occurrence with a count of 17. A detailed examination of the individual codes can be found in Table 18 to gain further insight into this category. Within this category, the most prevalent code was "individual growth." Although the overarching focus was on the concept that NOVUS students would be adequately prepared for the future, the marketing endeavors primarily emphasized the distinctive pathways NOVUS students would develop as learners. The evidence suggests that the marketing materials conveyed a commitment to fostering individual growth instead of group-oriented advancement, aligning with the child-centric approach sought to appeal to prospective parents in the "Northstar Shaper" and "Future Kid Builder" groups.

Table 17

Categories from Marketing Materials

Categories	NOVUS Marketing Materials
Outcomes for NOVUS Students	17
Relationships and Community	8
Environment	2
NOVUS Goals	2

Table 18

Number of Codes for Outcomes for NOVUS Students Category

Codes	NOVUS Marketing Materials
Individual Growth	7
Well-being	3
Agility	2
Critical Thinking	2
Curiosity	2
Passion	2
Agency	1
Collaborative Skills	1
Freedom	1

The other codes in this category are common 21st-century skills intended to prepare learners for an ever-changing world. The video prepared for the panel discussion on November 3, 2019, was a compilation of interviews with prominent CEOs from various companies, such as Kerry Express, Thailand's fastest-growing private express company. The video started with the question: "How should we prepare children for the future?" Footage of various business leaders answering this question was juxtaposed with images of children engaging in different activities and key phrases as text. For example, as one CEO explains how children should have as much "freedom as possible in thinking and in doing," a young boy with an airplane wearing a cape is shown running in a field. The text over the image stated, "Freedom to think." We can assume that including the CEOs was to bring credibility to the project and convince potential families that the NOVUS model would bring success by fostering critical skills in their learners. Other questions posed in the video were: "How do we adapt to the fast-changing world?" and "What does the future of education look like?"

Well-being was mentioned three times as an outcome. While addressing student well-being has been a prevalent conversation in international schools, including that as a school goal differed from the marketing of other international schools in Bangkok. One example from the video interviews with CEOs was a scene with two young girls in white dresses running through a forest in slow motion. A voiceover of another CEO stated, "Happiness is empowerment. And then you can go beyond your skills." These videos, filmed and distributed before the COVID-19 pandemic, perpetuated the increasing need post-pandemic for attending to the well-being of their students.

With a frequency of eight, the "Relationships and Community" category suggests that NOVUS emphasizes the importance of relationships and community within the educational

environment. The marketing materials focused on how NOVUS intended to foster strong connections among students, teachers, and the wider NOVUS community. Jin Woo Lee, the Chief Executive Officer of Rabbit Line Pay, quotes, “There is a big gap between school and what the students learn on campus and outside of school.” The next scene in the CEO interview video points out that learning should be set in real-life contexts.

The last two categories were “environment” and “NOVUS goals.” While the investing parties had dedicated impressive resources to the physical structure of the campus and classrooms, attention to the innovative school structure only appeared twice in the marketing materials I coded for the case study. Two possible reasons for the lack of focus on the physical aspects are (1) the campus was incomplete, meaning prospective parents could not yet take a campus tour, and (2) the marketing team wanted to focus on first convincing parents that the existing model of schools needed to change. The intention was to provide a rationale for a school like NOVUS to attract suitable families. The marketing target was young parents working as entrepreneurs or venture capitalists in innovative industries who would have the impetus to look for a non-traditional school while having the means to afford the tuition.

NOVUS goals mentioned in the marketing materials were references to “curiosity,” not a specific mention of the NOVUS DNA. The NOVUS mindsets, “Driven to contribute,” “Equipped to transition,” “Inspired to Connect,” and “Curious to Explore” were not explicitly mentioned. Overall, the data suggest that the NOVUS marketing efforts focused on outcomes for students, the purpose of the school, relationships and community, and the learning environment. These insights provide an understanding of the key areas NOVUS emphasized in marketing materials, giving potential stakeholders a glimpse into the school's values and offerings. However, in there are no specific processes for the school to meet these expectations in coding

the marketing materials. Although the materials were designed to market a school, project-based learning, the curriculum, nor the roles of the teachers were addressed. The marketing focused on promising an outcome and a change without mentioning how this would be accomplished.

Designing in the Dark

The inability of our team to stay grounded and transition from the abstract to the concrete became a significant challenge during the planning year. We were not fully aware of all the constraints before diving into the design phase, which directly contradicted the fundamental principles of the design process. The lack of awareness hindered the already-divided team's ability to address the project's demands effectively. There was an ever-present tension and pressure to adhere to a school's traditional elements that were hard to ignore (standards, Thai government regulations, WASC) when we were striving for an alternative, innovative model.

One instance in which tensions became evident was our involvement in marketing the school. During admissions events, we encountered questions from prospective parents that we needed more planning to answer, such as the specifics of a typical school day. We had overlooked essential logistical questions that parents seeking a school would naturally ask. However, instead of stepping back and considering the bigger picture, our team focused on addressing these immediate FAQs, diverting our attention from the overall design process. As a result, we dedicated significant effort to creating examples and pathways illustrating a typical day at the school, attempting to bridge the gap between the abstract and the concrete. Figure 29 represents a sample day for a middle school learner. While the flexibility is ideal, the model needed to address the logistical aspects of such a schedule. The team should have managed crucial logistical questions such as implementing language learning or swimming classes. These undetermined aspects left potential parents needing clarification about the school's curriculum.

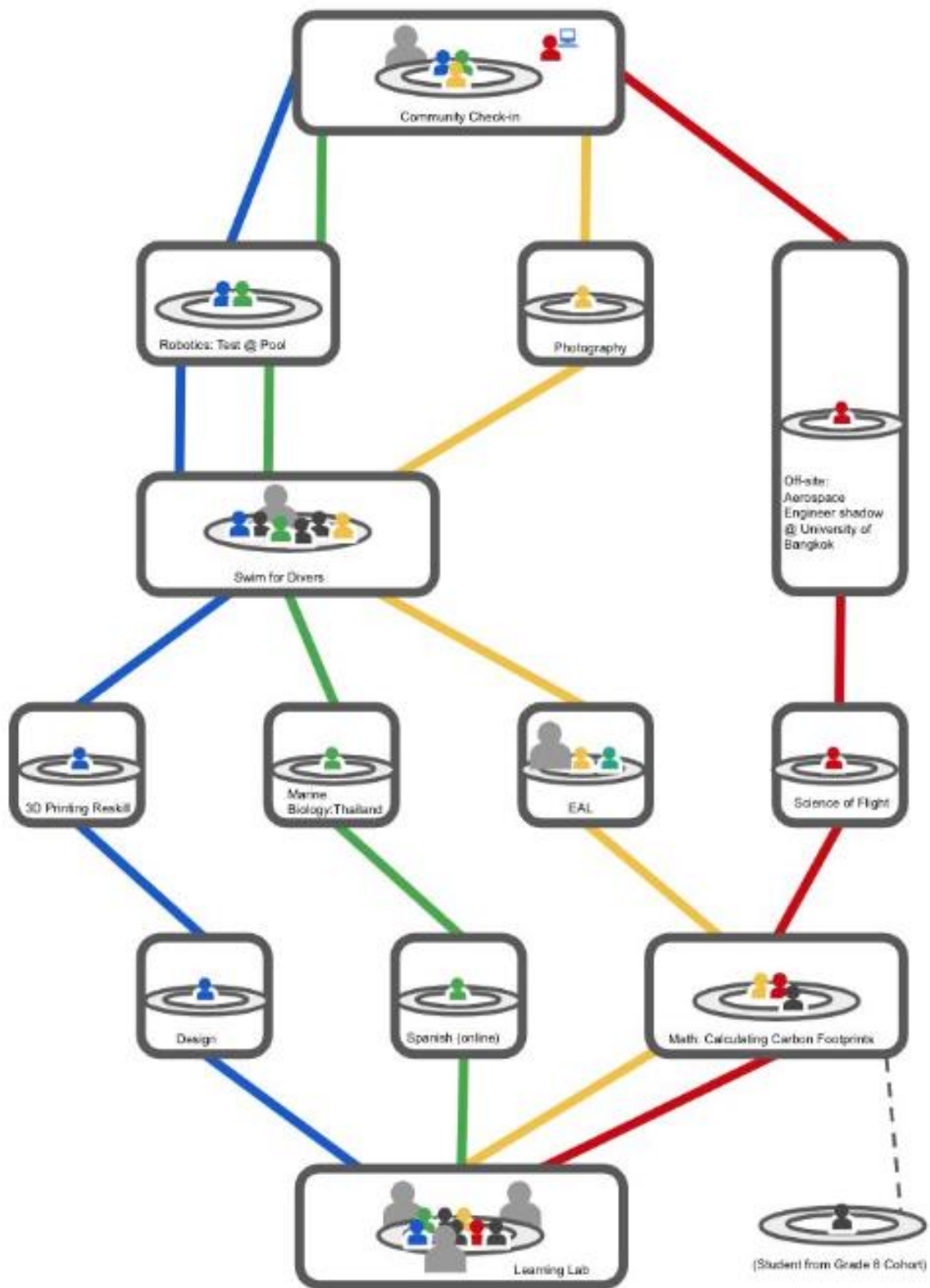


Figure 29. A sample day in the Middle Loop.

One of the constraints we faced in answering the questions posed by parents about a typical school day was the incomplete staffing situation, which was directly tied to enrollment. As the number of enrolled students remained uncertain, we could not hire staff members accordingly. The uncertainty created a challenging predicament as we could not effectively finalize the staff structure and distribute responsibilities. The lack of a clear staffing plan further hindered our ability to ground the project in reality and ensure its successful implementation. Without a complete and stable staff, we could not provide concrete answers to questions about teacher-student ratios, specialized instructors, and other vital elements that parents were understandably concerned about.

Next, I describe the three main external criteria the team encountered: the Thai Ministry of Education license, WASC standards, and the New York State Standards. These all clashed with the desire of NOVUS to provide a flexible and dynamic program for their students. I also examine how these new constraints were perceived and interpreted.

Thai School License

During the planning year, a significant revelation emerged when the Learning Design Team discovered that a Thai license had already been submitted to the Thai Ministry of Education (MOE). The submission occurred in May 2019 before the team arrived and was approved in August 2019. The established license illuminated previously unconsidered rigid constraints. However, the extent to which schools were required to adhere to traditional requirements set forth by the Thai MOE, such as seat time and units for graduation, remained unclear. The challenges NOVUS faced in adhering to the Thai MOE requirements may have been unique due to the nascent status of NOVUS. Other schools might have varying experiences depending on their specific characteristics and the evolving educational landscape in Thailand.

To navigate these constraints and effectively align our project with the expectations of the Thai MOE, a deeper understanding of their role and the significance of adhering to traditional requirements was essential. The Thai MOE serves as the central governing body responsible for overseeing and regulating educational institutions in Thailand. Formal parameters, such as seat time and graduation units, are consistently employed to ensure a standardized educational structure. Approval of the submitted license indicates their acknowledgment of our school's compliance with the established educational standards and guidelines.

Understanding and integrating these requirements into our planning was crucial to maintain compliance with the Thai MOE and ensuring our school's legitimacy and recognition within the local educational context. To successfully implement a school progressive school model aligned with the Thai MOE, conducting further research and engaging in dialogue with the Thai MOE was imperative to understand these requirements comprehensively. Instead of further study and discussion with the Thai MOE, the team members sought to connect with other educators in international schools in Thailand to gain insight into the MOE's role. NOVUS's specific obligations regarding the Thai MOE license remained ambiguous, leading to uncertainties in meeting these requirements. An exhaustive examination of these traditional prerequisites and their alignment with our project goals was needed to create a successful educational institution.

Innovative schools face several challenges in adhering to the Thai MOE's requirements. For instance, the Thai MOE emphasizes a traditional curriculum focusing on core subjects and standardized assessments. Hence, alternative or interdisciplinary learning approaches may need support to align with the Thai MOE's curriculum and assessment expectations. The situation

demanding negotiation and alignment with the MOE guidelines to incorporate innovative teaching strategies and non-traditional subjects into the curriculum.

Furthermore, the Thai MOE's significant reliance on standardized testing as a gauge for student performance and school quality may limit innovative schools' abilities to implement alternative evaluation methods. NOVUS wanted to avoid introducing standardized testing and was considering alternatives better aligned with project-based and interdisciplinary learning, such as performance assessments, portfolios, or other non-traditional approaches. The team's consensus was that such testing forms do not effectively and meaningfully assess students' learning depth. Standardized tests, including those offered by NWEA, like the Measures of Academic Progress (MAP) Tests or the International Schools' Assessment (ISA), was misaligned with the competency-based curriculum NOVUS aspired to provide. Consequently, we needed to find ways to incorporate innovative assessment practices within the framework of the MOE's requirements.

The MOE license hindered other assessment decisions. Figure 30 shows a page from the NOVUS application about grading. In the MOE license, standards-based assessment of grade level expectations must be assigned a traditional letter grade for an official transcript. While NOVUS intended to use New York state standards, many team members felt that measuring students to grade level expectations was inappropriate for the diverse community in an international school. Several people felt that grade level-based assessment was unfair and would negatively impact learners as the curriculum should be based on student interests and abilities.

Specific MOE requirements for teacher certification presented challenges for NOVUS, especially when hiring teachers with specialized skills or expertise that did not align with the MOE's established qualifications. Each hire was handled individually without a clear hiring

9.2 Primary and Secondary Assessment and Evaluation of Learning

Assessment for the Primary and Secondary grade levels will follow a standards based approach to monitoring students progress, and if conversion is required to a traditional grade then the following table outlines how this grade conversion would be completed.

Standards Based Assessment of grade level expectations	Letter Grade	Percentage
Performance Level 4 Exceeding Expectations	A	94-100
	A-	90 - 93
Performance Level 3 Meeting Expectations	B+	87-89
	B	84-86
	B-	80-83
	C+	77-79
	C	70-76
	C-	65-69
Performance Level 2 Approaching Expectations	D+	60-64
	D	55-59
	D-	50-54
Performance Level 1 Not Yet	U	Below 50

Figure 30. Conversion table from standards-based assessment to letter grades.

policy from the Human Resources (HR) department. On numerous occasions, the Learning Design Team had concluded the recruitment process with a prospective candidate only to discover that the candidate's qualifications failed to meet the MOE's stipulations.

Persistent changes within the HR department presented difficulties in ascertaining the precise qualifications criteria. An international school's HR department typically collaborates closely with a designated MOE officer to negotiate and advocate for the Thai teaching license. However, as a newly established entity, NOVUS's HR department had limited position to negotiate. Further, the HR team needed established connections and expertise to successfully navigate the process of acquiring Thai teaching licenses for each prospective teacher. The scenario resulted in an arduous task of complying with these requirements while ensuring the recruitment of competent and qualified teaching staff capable of implementing innovative pedagogical practices.

Additionally, the approved license by the Thai MOE outlined specific time allocations for each subject area, which did not align with NOVUS's interdisciplinary approach to learning. The guidelines seemed outdated and unrealistic. For example, Figure 31 displays the time allotment for the Early Years 2 program. The learners are two to three years old. As the Early Years program is play-based, determining minutes for each development area seemed unattainable. However, a similar chart is required for every grade level. In addition, expectations were outlined by grade level and did not align with the NOVUS multi-age classroom model.

The Thai MOE bureaucratic procedures can be intricate and time-consuming, creating difficulties for innovative schools aiming to be agile and responsive. For instance, the school calendar initially proposed 185 teaching days in an academic year, which the team later attempted to reduce by three days to allow for professional development and planning days. The

Pre-Kindergarten and Kindergarten 3 -5

The school week is divided into 30 x 50 minute periods. There are 1110 periods in the early years school year. (Time is allocated daily for rest and community time)

Level	Significance of Education		Educational duration	
	NOTE: In prekindergarten, children are expected to demonstrate increasing awareness and competence in the areas that follow.		(minutes / hours)	
	Material Experience	Expected Learning Keys	Per Week (min)	Per Year (hour)
K2 (2 years old)	Focus on 5 key areas for development	1. Approaches to Learning - play for curiosity	300	185
		2. Physical and Health Development - sensory awareness and gross motor	200	124
		3. Social Emotional Development - awareness of self and others	100	61
		4. Communication Language and Literacy - uses oral language - mark making	300	185
		5. Cognition and Knowledge of the World - counting	200	124
		Rest and community time	400	246

Figure 31. Time allotment from Thai MOE license.

change would continue to meet New York state's requirements for instructional days. The Learning Design Team felt these days would be crucial in further developing the curriculum throughout the year. The small change required several meetings and necessitated additional reports detailing which standards would be omitted during these three days. The need to navigate bureaucratic structures and comply with administrative regulations while fostering innovation required careful planning and effective communication with MOE officials.

Western Association of Schools and Colleges (WASC) Standards

Credibility plays a pivotal role in the success of any international school, particularly for a new institution aiming to establish its reputation and gain the trust of stakeholders. Accreditation is a vital marker of credibility, demonstrating that the school meets recognized standards of quality and excellence from the United States. Therefore, NOVUS needed to pursue accreditation to instill confidence in prospective parents, students, and the wider educational community. Even though the Thai MOE's requirements were strict and inflexible, the Western Association of Schools and Colleges (WASC) standards were susceptible to multiple interpretations, leading to discord among the team regarding the requirements.

Acquiring accreditation from WASC necessitated that each team member fully understand the standards and requirements. The WASC accreditation process comprehensively evaluates an institution's programs, organizational structure, and effectiveness in fostering student learning and growth. By satisfying these criteria, NOVUS could demonstrate a commitment to upholding high educational standards and constant improvement. Gaining a thorough understanding of the specific criteria set forth by WASC was vital to ensure that our school met its expectations. As noted earlier, not all LDT members had previous experience with the WASC accreditation process.

NOVUS applied for initial accreditation in 2018 and received approval in 2019. The process required a comprehensive self-study report to provide an in-depth analysis of the school's educational programs, instructional methods, student support services, and overall compliance with WASC standards. Substantial evidence was gathered to showcase the school's adherence to WASC criteria, thereby earning initial accreditation. Evidence included documents like curriculum plans, assessments, student work samples, and organizational policies and procedures. As the school was yet to open for students, NOVUS submitted initial prototypes to demonstrate our consideration of the WASC standards in our planning. The self-study process demands an exhaustive examination of the school's operations, requiring the active participation of faculty, administrators, and other stakeholders. Regrettably, during the planning year, most of the self-study report was completed by a single individual. By gathering and presenting substantial evidence, the report aimed to demonstrate the school's readiness for accreditation and its commitment to providing a high-quality education to its students. Suggestions for improvement are generated by the school, followed by feedback from the WASC accreditation committee. Growth in these areas would be needed for re-accreditation in 2023. One drawback of not including all stakeholders was that the improvement areas outlined in the final report were one person's opinions rather than representing our collective ideas.

The WASC accreditation standards encompass a range of areas that educational institutions must meet. Unsurprisingly, the most comprehensive section in the WASC standards pertains to curriculum and instruction. Schools must offer a coherent and rigorous curriculum aligned with academic standards, ensuring all students have equal access to high-quality education. The curriculum section requires demonstrating the development and implementation of curriculum frameworks, instructional materials, and assessments that bolster student learning

and achievement. For the planning team, this posed a challenge as critical factors in the curriculum were yet to be ascertained. For instance, we lacked knowledge of the students' needs or the teaching staff's qualifications. The New York state standards would be used; however, how they would be organized into learning units or how literacy instruction would be approached were questions that still needed to be answered. The team prototyped several different planning tools for units, each one more intricate than the other. With several people prototyping a planning template, a consensus for the components was not reached before the school welcomed the teachers in August 2020.

An additional crucial criterion that WASC schools must satisfy pertains to the support structure for students with specific needs. WASC stipulates that schools must establish comprehensive student support systems to meet students' diverse academic, social, emotional, and physical needs. This includes counseling services, academic guidance, and interventions supporting student success and well-being. At NOVUS, the team focused on providing support was called the "Student Success Team." Two EAL teachers and one learning support specialist were hired for the 2020-2021 academic year. The Learning Design Team faced difficulties in drafting a policy for student support, as none of the members had specific expertise in learning support. A policy outlining the data used to determine support and the particular levels of help was needed. Developing a policy became another contentious issue among the team. Some members advocated for a completely inclusive student population, while others contended that the number of English as an Additional Language (EAL) learners needed to be capped. The argument for a quota was to ensure that their needs would be met with the two EAL teachers in the staffing model.

A related WASC requirement mandates schools to foster a safe and inclusive learning environment promoting student engagement, well-being, and social-emotional development. Creating opportunities for student leadership, nurturing a positive school climate, and providing support services to address students' individual needs is the expectation. However, as student enrollment had yet to be solidified, the team found it challenging to determine how to meet the WASC criterion. No decisions were made in the planning year regarding this requirement.

Much like the Thai MOE requirements, WASC also emphasizes established assessment practices. However, their standards are more flexible and rely less on standardized assessments. WASC dictates that schools implement a systematic and continuous process that evaluates student progress and achievement. This includes utilizing multiple assessment forms, analyzing data to inform instructional practices, and fostering a culture of ongoing improvement in teaching and learning. NOVUS needed a comprehensive assessment policy detailing the approach to assessment. The Learning Design Team faced tension as not all members believed in a school-wide model. Many early discussions centered around anecdotal records as the primary form of assessment. Some members were adamant that there would be no formal report cards in the Early Years or Lower Loop program. However, no alternative was proposed for parent communication and providing official documents for students moving to other schools. When NOVUS opened to students in August 2020, formal decisions had yet to be made about assessment and reporting.

The WASC standards address the essential systems for a school to function effectively and support student learning. All governance and leadership criteria expect that the systems in place facilitate teaching and learning. WASC asserts that schools must exhibit effective leadership and governance structures that promote a positive school culture, facilitate

collaborative decision-making, and ensure accountability. This involves establishing clear policies and procedures, conducting ongoing professional development for staff, and engaging in strategic planning and evaluation processes. However, the LDT did not participate in developing the leadership structure, supporting systems, or processes. The investors developed these elements. Another aspect to consider was that until the school officially opened to students, NOVUS was considered a business entity under the Thai investing company. This fact became a challenge as they had the final say in any decisions made for the school. While they left the curriculum development to the Learning Design Team, they wanted the final input on the organization's business side, including finances, marketing, and human resources.

These examples are not exhaustive, and the WASC accreditation standards encompass a broader set of criteria covering various aspects of school operations and effectiveness. As a new school, the tensions the planning team faced to adhere to the standards are unique and amplified by the team's inability to make collective decisions.

New York State Standards

From its inception, NOVUS International School decided to base its curriculum on the American education system. As such, the school front showcases three flags: the Thai flag, the American flag, and the NOVUS school flag. Incorporating the New York State Standards was a strategic move to distinguish NOVUS from the oversaturated market of International Baccalaureate (IB) and British schools in Thailand. New York because the state adopted the national curriculum standards. Adopting one state's curriculum was a prerequisite for obtaining the Thai Ministry of Education (MOE) license.

However, the NOVUS LDT faced several debates regarding the role of the New York State Standards in curriculum design, assessment, and reporting. We familiarized ourselves with

these frameworks to determine how these standards would be incorporated into student learning units. The differing levels of understanding led to disagreements concerning the suitability of these standards for NOVUS students. Some team members refused to refer to the New York standards entirely, leading to tensions during discussions.

A prominent example was the New York Social Studies Standards, which focused extensively on the American context. However, the New York State Social Studies curriculum was based on the C3 Framework for Social Studies State Standards. Developed by a group of United States state-level curriculum supervisors and experts in social studies, it seeks to prepare students for effective and engaged civic life. The "C3" stands for "College, Career, and Civic Life." The C3 Framework is not a set of standards but rather a guide for developing standards, curriculum, instruction, and assessments that can be used in any context. Overall, the C3 Framework emphasizes the development of critical thinking, problem-solving, and participatory skills to engage students actively in the learning process. It underscores the idea that social studies should be inquiry-driven, where students ask questions, gather information, and develop, present, and defend conclusions. Despite the C3 Framework emphasizing critical thinking, problem-solving, and active student engagement, some team members perceived it as excessively "America-focused" and sought ways to reduce its influence on the NOVUS program.

Incorporating the New York state standards in an international school setting presented several challenges. While these standards provided a roadmap to educational quality and consistency, they could stifle creativity and flexibility, often the hallmarks of innovative schools. The New York state standards outline specific content knowledge and benchmarks students are expected to achieve at each grade level. Some team members felt that prescribed standards tied to grade levels might limit innovative or interdisciplinary approaches that deviate from the

established curriculum. We faced difficulties integrating emerging subjects, project-based learning, or other unconventional methodologies while adhering to the stipulated content and benchmarks.

Another obstacle was the sheer volume of the standards. For instance, the Common Core State Standards (CCSS) for Mathematics consists of numerous sections for grades K-8 and high school. For grades K-8, the standards are further divided into domains that group related standards. For example, in Grade 1, there are four domains: Operations & Algebraic Thinking, Number & Operations in Base Ten, Measurement & Data, and Geometry. The number of standards within each domain varies, but there are generally 18-28 standards per grade level in K-8. The standards are grouped into conceptual categories for high school rather than by grade level: Number and Quantity, Algebra, Functions, Modeling, Geometry, and Statistics & Probability. Each category contains multiple domains, and each domain contains several standards.

The Learning Design Team deemed the expectation to incorporate all these in an interdisciplinary program unattainable. Consequently, considerable time was devoted to bundling these standards into a NOVUS-specific framework, which posed a significant challenge, given the progressive nature of these standards and the impact of omitting one. In the end, the team finally agreed to reference the New York standards in the NOVUS program without committing to achieving all of them. The team failed to finalize the standards for learning planning during the planning year.

Implementing New York state standards typically requires ongoing teacher professional development to ensure effective instruction aligned with the standards. However, if innovative practices or instructional methodologies differ significantly from traditional approaches, teachers

may require additional training and support to adapt their instructional strategies. Providing professional development opportunities that promote innovative instructional techniques and alternative assessment methods can also support teachers in balancing compliance with state standards and fostering innovative practices. NOVUS could not allocate the time for professional development to enable teachers to effectively implement innovative pedagogical approaches while ensuring alignment with the state standards.

The planning team explored methods to integrate creativity and critical thinking within the prescribed content and benchmarks to address these challenges. We also sought flexibility within the state standards framework to accommodate interdisciplinary connections, project-based learning, and other innovative approaches to enhance student engagement and achievement. The team developed a set of six competencies, which became the framework for the NOVUS program (see Figure 32). These were designed and defined by the whole team through research and discussion. Each competency was associated with a set of future-ready skills, solidified in April 2020.

As the team started working from the NOVUS competencies and future-ready skills, it attempted to connect the New York state standards to each future-ready skill (see Figure 33). The team believed planning learning through future-ready skills was a method of bundling the standards together in an interdisciplinary fashion. Rather than focusing on individual grade-level standards for every subject, we relied on the anchor standards for each subject area. Anchor standards offered an alternative and allowed us to focus on the main objectives of the discipline. For example, the Common Core State Standards for English and Language Arts (ELA) identifies four main areas, each with 4-10 anchor standards: Reading, Writing, Speaking and Listening, and Language. There are 32 ELA anchor standards, which gets specified in greater detail for

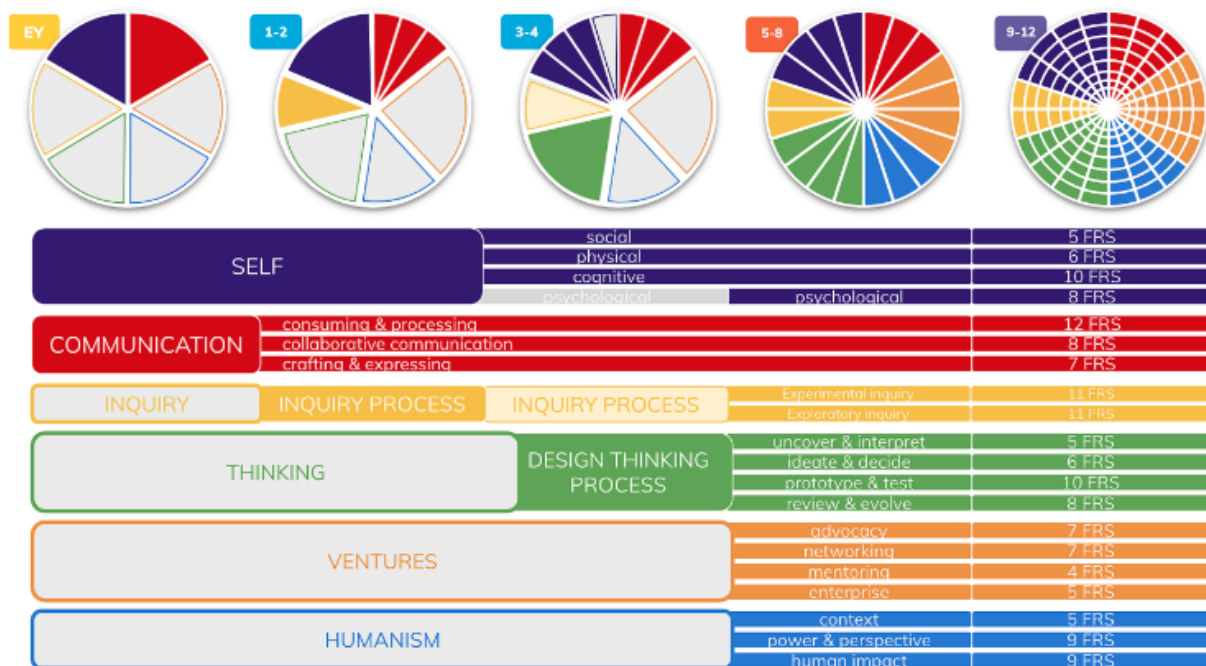


Figure 32. The NOVUS framework of competencies and future-ready skills.

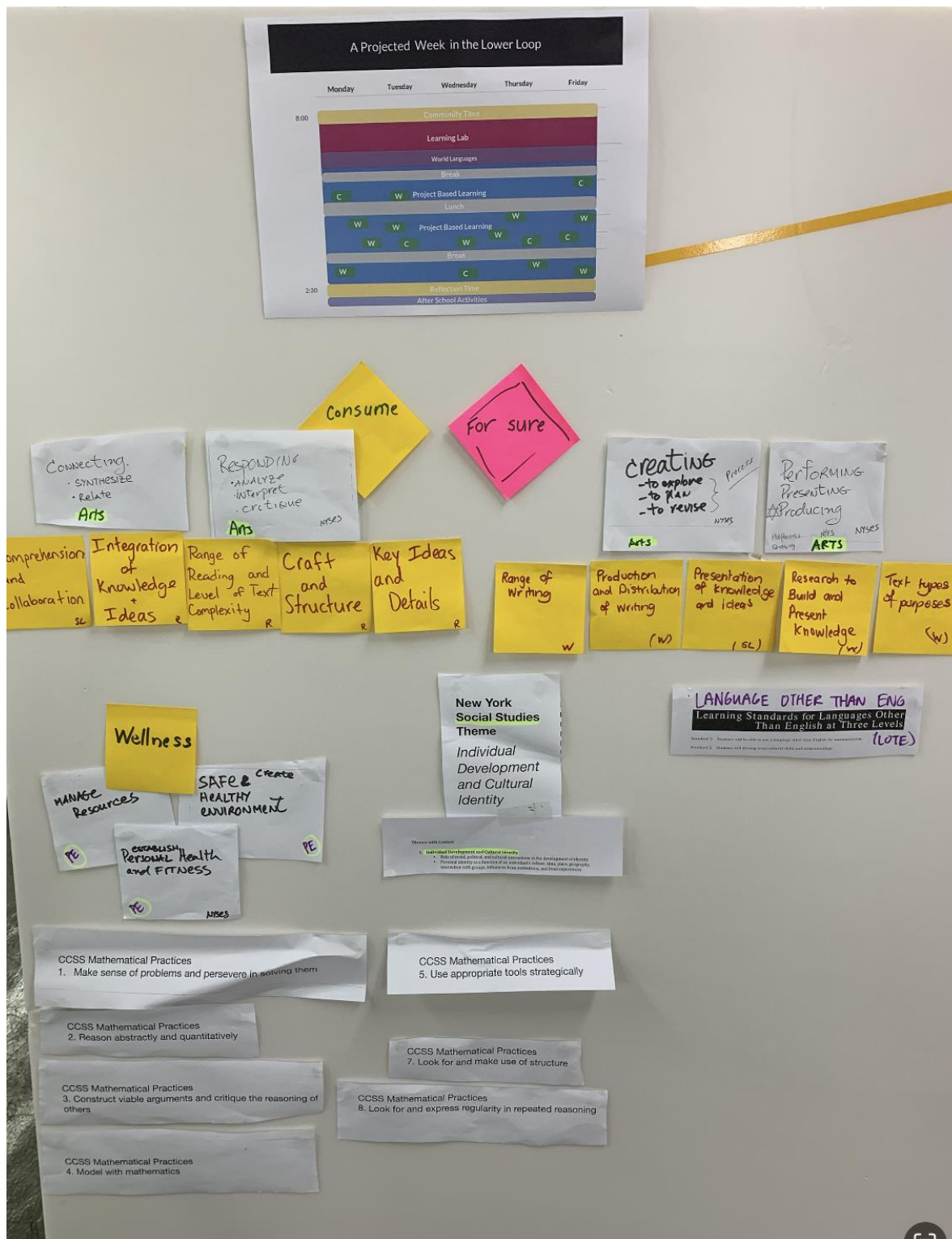


Figure 33. Sorting anchor standards into the NOVUS framework.

each grade level. Connecting anchor standards ensured that planning for learning using the future-ready skills connected to the New York State Standards and standards were referenced in the NOVUS framework.

Investigating Individual Interpretations of the Constraints

I report on individual perceptions of the complexities and how these complexities were amplified due to external pressures. We discovered the constraints mentioned previously in March 2020. A subset of team members minimized the role that the Thai Ministry of Education (MOE), WASC accreditation standards, and New York state standards should have in shaping NOVUS's design.

The team's prevalent negative perception of established curricula and programs contributed to our challenges. This perspective aligned with the hiring ethos for the foundational Learning Design Team, which underscored NOVUS's intent to diverge from the traditional educational model. NOVUS Learning Team members generally expressed favorable attitudes towards more progressive models and exhibited skepticism towards traditional school elements, such as reporting, grades, and standards. One team member described an experience with a school that, despite its international staff and students, rigidly adhered to a British educational model that "was not that creative. They put creativity back in the box of design and technology and those teachers owned the creativity." Another team member lamented the emphasis on particular subjects in traditional schools for university preparation. He elaborated with a personal story: "I always remember some of my best creative kids in visual arts would only be able to do it up until grade 10 because the counselor was telling them they had to do physics and chemistry and biology."

An implicit sentiment prevailed among the team members, suggesting that many schools maintained the status quo without meaningfully fostering creativity. NOVUS intended to break the mold, and we were proud of the endeavor. Such an attitude possibly instigated resistance to incorporating external constraints in the planning phase. Adjusting for these constraints was viewed as compromising the educational vision, and each team member had varying comfort levels with such compromises. The lack of a cohesive team, a clear leadership structure, and unequivocal messaging regarding alignment with constraints all contributed to the ambiguity around the level of compromise required.

Further, the emphasis on innovation in the marketing strategies only fueled the reluctance to adopt traditional elements. The primary marketing objective was to justify the need for a new school design, inadvertently creating an echo chamber for the planning team where innovation was lauded, and tradition disdained. This rhetoric and a hiring process favoring change agents made the transition towards accommodating constraints challenging. A clear directive from leadership or a unified team might have tempered the staunch resistance to the requirements stipulated by the three external organizations.

Analyzing interview data explains the LDT's perception of traditional school models. In There were four instances in which members criticized grade-level expectations for being arbitrary and excessively pressurizing students, impeding natural learning processes. Interestingly, each interview spontaneously alluded to previous experiences of stifled creativity within a school context (see Table 19 for specific data).

Unprepared for When Reality Hits

The previous section highlighted the need to revise existing systems, which often contradicted NOVUS's mission to design an innovative school. The initial work by IDEO and the

Table 19

Codes Related to Traditional Models

Codes	Frequency
Grade level expectations	4
Rigid	4
Established curriculums	3
Traditional metrics	2
Separate subject	1
Self-discovery	1
Indoctrination	1
Outdated curriculum	1

Learning Design Team remained largely theoretical. The task of the Learning Design Team was to distill these conceptual propositions to devise tangible tools and systems for teaching and learning. We had prototyped some preliminary decisions but still needed to formalize team structures and systems. The lack of preparation and absence of necessary systems exacerbated the difficulties faced when the school opened its doors to students in August 2020. In this section, I chronicle the impact of the COVID-19 pandemic on NOVUS's inaugural period, delve into the staffing changes that occurred, and illuminate certain deficient school-wide systems.

Impact of the COVID-19 Pandemic

Like the rest of the world, the COVID-19 pandemic impacted education in Thailand in early 2020. However, as NOVUS was new, the pandemic affected us differently. In January 2020, the first case from a traveler from China was confirmed. In March 2020, the Thai government announced the closure of all schools, including international schools, as part of nationwide measures to control the spread of COVID-19. International schools transitioned to online learning. However, while it impacted marketing and admission efforts, NOVUS International School did not yet have students; we considered this excellent timing at the time.

At the end of March, the Thai government imposed a nationwide curfew, restricted travel within Thailand, and announced the closure of non-essential businesses. The Civil Aviation Authority of Thailand (CAAT) banned all incoming international passenger flights to Thailand, except for repatriation flights, cargo flights, and specific categories of travelers. The travel restrictions impacted two LDT members, as they were attending a family event in Indonesia when it was announced. As they could not travel back to Thailand, the only option was for them to return to their home country of Australia. As previously mentioned, both were members of the

senior leadership team, significantly impacting the team's work and they did not arrive until the first day of school.

In June 2020, Bangkok eased lockdown measures and reopened shopping malls, restaurants, and businesses with strict health and safety guidelines. As travel in and out of the country was still restricted, the number of cases declined. In July 2020, some international schools in Thailand reopened with in-person and online classes, implementing health and safety protocols. NOVUS could open its doors to students in August 2020 without implementing remote learning, which would not have been ideal for a new school. However, our more significant concern was about the teachers joining the school. On July 1st, Thailand started to allow limited entry for specific groups of foreign nationals, including those with work permits, residency permits, or family members of Thai nationals. Strict quarantine measures were imposed, including the requirement of a negative COVID-19 test result and a 14-day mandatory quarantine for all incoming travelers. Each person entering the country had to be approved by the local Thai embassy, with the accompanying paperwork to enter the country. The paperwork needed to be submitted and collected in person, and availability in quarantine hotels was limited.

During the planning year, the Learning Design Team recruited 25 teachers worldwide. The Human Resources (HR) team worked with agencies to obtain approval letters, with teachers to provide the correct paperwork, and with hotels to book quarantine facilities. The new process was a challenge for the HR team, as each person's situation differed. Each case depended on the local Thai embassy, nationality, education status, and location. Flights from certain countries were still banned from entering Thailand. Thai governmental organizations are sparsely located throughout the world, and to add further complication, they were also working with a limited team or remotely, based on the COVID-19 restrictions of their location.

As a result, some teachers were not located near a Thai embassy or Consulate General office, so they could not submit their paperwork or collect their approval letters in person. If travel within the country was permitted, incoming teachers had to travel and stay near the local Thai office until permission was granted. A large country like the United States only has one Thai embassy and four Consulate General offices. Countries such as Nepal did not have an embassy, and countries such as China had closed their offices. The turnaround time for applications and strictness also varied across the various offices.

To further complicate matters, Thai work permits for educational institutions are issued based on the person's Thai teaching license. The process of applying for a temporary license depends on the person's education degrees, not on a valid teaching credential from another country. For example, a PE teacher with a Bachelor of Arts degree in English literature and a valid Teaching certificate from New York state could not get a temporary license as his undergraduate degree was not in education.

In addition, due to the pandemic, many of the teachers hired were displaced and no longer in the country where they were employed. Some were in their home countries, while others did not have that option. Obtaining permission was also a challenge for families, especially if members held different passports. In some cases, families with school-aged children were permitted to enter Thailand based not on the parents' work status but on the children's enrollment in the school. While they could enter Thailand, they could not work until the paperwork for the work permit was completed. Additionally, flight options were limited. For approval, proof of booked flights and quarantine hotels must be submitted for consideration. However, if there was a delay in the paperwork, everything needed to be rebooked, and changes were required to be submitted to the Thai embassy or consulate office. One teacher, holding a

UK passport but stranded in Cambodia, commissioned a private plane to arrive in Bangkok. He booked the plane, obtained the approval, and then sold the remaining seats on social media.

In August 2020, on the inaugural day of school, only Thailand-based teachers were present and prepared to commence work. Given the limited staffing resources available, the situation necessitated that each member of the Learning Design Team assume teaching responsibilities. Throughout August and September, we welcomed new educators at different intervals. As a team, we felt the need to provide sufficient time for incoming staff to secure housing and establish a comfortable living situation. These circumstances led to numerous instructional disruptions during the first few months.

Due to teachers' inconsistent start dates, we could not provide a comprehensive orientation that would have facilitated a mutual understanding of NOVUS's ethos and curriculum model among all staff members. Other international schools facing similar circumstances resorted to conducting orientations online. However, due to our limited staff, we did not have the capacity to develop and implement such a program.

Staffing and Student Enrollment

In June 2020, three planning team members departed from the project. They cited personal reasons, amplified by the COVID-19 pandemic. These individuals, who had not been assigned distinct roles upon the school's opening, were not replaced. Tension among specific team members lingered, forcing the rest of the team to navigate around this friction when collaborating. Despite the staffing model projected for 200 students being fulfilled, the restrictions brought on by COVID-19 delayed the arrival of most overseas teachers for the inaugural day of school in August 2020. Consequently, the planning team members assumed and

shared teaching responsibilities until the new educators arrived. By October 2020, the final hired teacher had joined the campus.

The late arrival of teachers presented multiple challenges. Thai law stipulates that employees can only receive payment once their Thai teaching license and work permits are finalized, a process initiated upon arrival. The time required for the procedure varied based on individual factors such as passport status, educational background, and previous experience. The school resolved to compensate teachers retroactively from their first day of work on campus, but their initial salary could only be disbursed once their work permit was finalized. This included any flight reimbursements or moving allowances. Consequently, some teachers received their salaries weeks into their tenure. As most teachers started working immediately after completing their mandatory quarantine, many lived in temporary accommodation during the initial months, setting a challenging tone for the school year's start. The compensation challenge caused a great deal of frustration and distrust among new teachers.

The admissions and Learning Design Team failed to reach 200 students by August 2020. The unequal distribution of students across the school meant Lower School teachers needed to engage with students immediately, while the Middle School had greater flexibility due to fewer students. A team of educators was also hired to develop the high school program before accepting students. However, no one from the Middle or Upper Schools was deployed to support the Lower Loop, which led to discontent over the unequal contact time across the school.

The impact of the Namjai campaign and the alteration of the admissions policy was felt by all teachers. As explained in Chapter 4, the student body predominantly consisted of Thai students new to international schools. Consequently, there needed to be more support in place for English language learners. In the Early Years, bilingual Learning Assistants could help students

communicate and support their transition into NOVUS. During the recruiting process, we assumed that most older students would have enough English to access the curriculum and participate in learning with teacher scaffolding. As a result, we hired Learning Assistants who could not provide bilingual support in Thai. Learners in the Lower School struggled to participate in learning and there were not enough EAL teachers to intervene and support. The two English as an Additional Language (EAL) teachers struggled to establish language goals for English language learners due to the absence of any assessment data. Further, no policy outlining how support would be structured and prioritized resulted in an ad hoc system where students displaying apparent needs were first supported.

In addition to unmet language needs, the revised admissions policy posed further challenges. A critical document for most international schools is a confidential reference from the previous teacher. The NOVUS admissions policy did not require input from previous schools and we unknowingly admitted students with additional learning and behavioral needs. While NOVUS strived to be inclusive, there was only one Learning Support teacher and no other specialized personnel. Without a counselor or educational psychologist on site, NOVUS was ill-equipped to meet these needs adequately. It quickly became apparent that consistent access to experienced special needs educators, such as a speech and language pathologist, occupational therapist, and reading interventionist, was required.

Furthermore, the influx of Thai learners affected the Thai language teachers. The Thai MOE requires students with a Thai passport to take a set number of hours of Thai language courses in a week. Given the number of students whose dominant language was Thai, we needed to continue developing Thai language skills at NOVUS. We needed more Thai language teachers to meet the requirement. The two Thai teachers were assigned to each division, and a disparity

existed between them as the number of students varied. Synchronizing the workload proved impossible due to the misaligned schedules of the Lower and Middle Schools.

An additional challenge to the school culture was the student population's demographics. The lack of diversity within the parent community led to multiple communication challenges and cultural divides. Parents could not access school updates in English, and the Front Office had to frequently clarify school policies and other aspects of the school day in Thai. The relationship between the parents and the school was not well-established, and many parents felt uncomfortable communicating directly with their child's teachers. Parents did not typically attend parent workshops.

Whether parents chose NOVUS due to its innovative aspirations or the discounted tuition remains unclear. Despite NOVUS's messaging focusing on presenting a different approach to learning, the team frequently fielded parent complaints about the need for student rankings or exams. The disparity between parents' perception of school and the NOVUS mission became more evident when re-enrollment numbers for the following academic year were confirmed. Table 20 compares the enrollment numbers for the 2020-2021 and 2021-2022 academic years, and the departure of fifty-eight students after the first year indicated these families' dissatisfaction with the NOVUS model.

Missing Systems

Several essential systems were either absent or inadequately established upon the school's inauguration. One glaring concern was the deficit of vital supplies such as scissors, an issue arising from delayed deliveries and a time-intensive approval process requiring signatures from the Thai investing company. Consequently, classrooms were scantily stocked on the first day. Although basic furniture, including desks, chairs, TVs, and projectors were present in each room,

Table 20

Student Enrollment for 2020-2021 and 2021-2022

Class	2020 - 2021	2021 - 2022
Early Years 2	10	8
Early Years 3	8	6
Early Years 4	12	5
Early Years 5	17	5
Grade 1	13	10
Grade 2	22	8
Grade 3	14	15
Grade 4	9	8
Grade 5	15	10
Grade 6	18	9
Grade 7	13	8
Grade 8	14	11
Grade 9	6	4
Grade 10	0	6
Total	171	113

classrooms needed essential items like trash cans, pencils, paper, and books. Furthermore, modern classroom amenities, including rugs for class meetings, soft furnishings for the Early Years nap room, and whiteboard easels for small group instruction, were absent. In response to these shortages, planning team members embarked on last-minute shopping excursions to local malls to procure necessary items while simultaneously planning lessons for the school's first weeks. The uncertain timeline for the arrival of these materials amplified the logistical hurdles experienced during the school's early operational phase. Some individuals even resorted to utilizing personal items until school supplies arrived.

Moreover, an orientation session acquainting staff with Thai culture and local nuances was deemed unnecessary. Most teachers prepared for the first school day were Thai nationals or locally based. Hence, we determined that addressing immediate operational hurdles was more urgent under the circumstances and time constraints. While we valued cultural understanding and orientation, the immediate necessity for logistical and administrative readiness was prioritized during the school's initial opening phase. Late-arriving teachers were consequently deprived of a proper acclimation to Thai culture, which may have contributed to several departures following the first year.

Other topics typically covered in orientation were skipped to meet the immediate demand of preparing learning spaces and planning curriculum before students arrived. Introductions to support staff and other systems were covered with the initial group. However, as the other teachers arrived at different times, the founding team could not cover all topics consistently for each person.

Teachers joining NOVUS anticipated some of the challenges they faced. For instance, in a subsequent interview conducted at the academic year's end, one teacher expressed:

As it's a start-up school, I expected things to be chaotic and very hard work for the first year....There was no flow or alignment of thinking, teaching, and learning within the school. Teachers had misunderstandings of core NOVUS values and terminology, there was not always time to plan, and not enough student information was provided at the beginning.

This statement alludes to the fact that the preparatory work conducted by the founding Learning Design Team fell short when confronted with real students. Another teacher reflected on the challenges of translating the theoretical ideals of an alternative model into practice, confessing to resorting to traditional methods in the absence of clear direction. The lack of a comprehensive orientation program and professional development days throughout the year only compounded these alignment issues. Several teachers voiced their desire for more training to effectively engage with NOVUS's pedagogical approach.

The planning team envisioned NOVUS adopting a flexible schedule where students could select classes based on their interests. However, the absence of a fixed timetable was another system found wanting. In another subsequent interview, a teacher observed, "For example, while having no schedule seems like it can work as an approach, there are many confines with which to deal." The teacher cited the example of swimming classes, which necessitated scheduling due to the requirement for student preparedness and instructors' need to know attendees for safety considerations. Within the first few months, it was established that a flexible timetable was impractical for elementary-aged children. Departments such as cafeteria staff and specialist teachers requested set class times instead of waiting for students to "opt-in." Consequently, a timetable was established for specialist classes, allowing cohort teachers to retain flexibility during other periods.

Another system that needed to be included was a clearly defined behavior policy outlining student conduct expectations. We attempted several times during the year to develop a cohesive approach to behavior once all teachers had arrived. Expectations of student behavior varied considerably among the teachers. One vocal individual strongly believed that students be free to roam the campus, a notion others deemed unsafe and unsustainable given the campus size. A meeting ended in a dispute over whether students should be escorted to each location or allowed to proceed independently. A reflective memo from a meeting serves to encapsulate my frustration:

I just do not understand how people are blinded by their distrust of certain members of the leadership team and their disdain for any type of structure that they ignore safety concerns and the other realities of being responsible for young children.

Conclusion

I concentrated on my discoveries from the NOVUS International School case study. Despite our collective experience and shared aspiration for change, we needed to establish a more unified conception of creativity and how we would embed that in the school structure. Creating a new educational model requires finding a way to synthesize diverse perspectives into a cohesive plan. The second insight was that fostering creativity contradicted the existing and planned organizational systems and external structures confounded the proposed system. Finally, the team and systems were underprepared upon the school's opening, amplifying the existing challenges. The theoretical framework of creative education faltered when confronted with the apparent realities of the situation. A comprehensive discussion of these findings is covered in Chapter 7.

CHAPTER 7: DISCUSSION AND IMPLICATIONS

The concept of NOVUS to be innovative and foster creativity was an exciting opportunity to disrupt the traditional school model. Embarking on creating a new school model felt like stepping into uncharted territory—a blank canvas awaiting exploration. The challenge that lay ahead filled me with anticipation and enthusiasm. My past encounters had taught me to approach the opportunity with caution, knowing that innovative ideas in education often encounter resistance, as traditional elements tend to hold strong sway. As the elementary school principal in my previous school, I was responsible for upholding the existing school model and often faced internal contradictions between my work and my educational philosophy. I had never self-identified as exceptionally creative or innovative. Consequently, I braced myself for the influx of new insights and experiences that my involvement with NOVUS would invariably yield. Would the aspirations of a forward-thinking, creativity-driven school materialize? Or would the familiar trappings of the conventional educational system prevail? Throughout the two-year exploration, I gained valuable insights into the importance of striking a delicate balance between traditional foundations and progressive concepts.

I decided to center the case study within my work environment to delve into newfound insights and make meaning from the experience to optimize my learning. I chose creativity as the research focus during my tenure at my former school, steeped in a rich tradition. The shift in my professional path toward NOVUS infused further enthusiasm as I felt the potential to learn and contribute to the discourse on creativity at NOVUS and other international educational institutions. Contrarily, my tenure at NOVUS significantly altered my understanding of schools and catalyzed self-revelations about my leadership capabilities.

In this chapter, I provide an overview of my case study's adopted process and methodology. I then present the findings, supported by relevant scholarly literature, and address the research questions. I transition to policy, practice, and research implications and conclude the chapter by reflecting on my leadership evolution throughout the study.

Overview of the Case Study

The NOVUS case study investigated a new international school's deliberate design strategy to foster creativity among its students. Recognizing the ongoing efforts of international schools to navigate their constraints and promote innovation to transform the purpose of schooling for their students, an in-depth exploration of NOVUS offers potentially beneficial insights for other educational institutions. Given the potential to impact other schools, I was excited to document the experience that could inform additional international schools.

The study took place in two phases, commencing in August 2019 and culminating with the arrival of students on campus in August 2020. The overarching research question was: *How does a start-up school, with creativity in its mission, develop and prepare for creativity with leaders and teachers?* The sub-questions were:

1. How does an international school conceive and design a creativity-focused school?
2. What factors promote or inhibit the integration of creativity in leadership, policies, curriculum design, and pedagogy in international elementary schools?
3. How do the design elements and efforts to address creativity at NOVUS International School compare with those of other international schools?
4. How does my involvement in this research transform my leadership practices?

To answer these questions, I conducted a two-phase case study (see Figure 34). Phase One extended from December 2019 to March 2020 and incorporated a questionnaire to understand

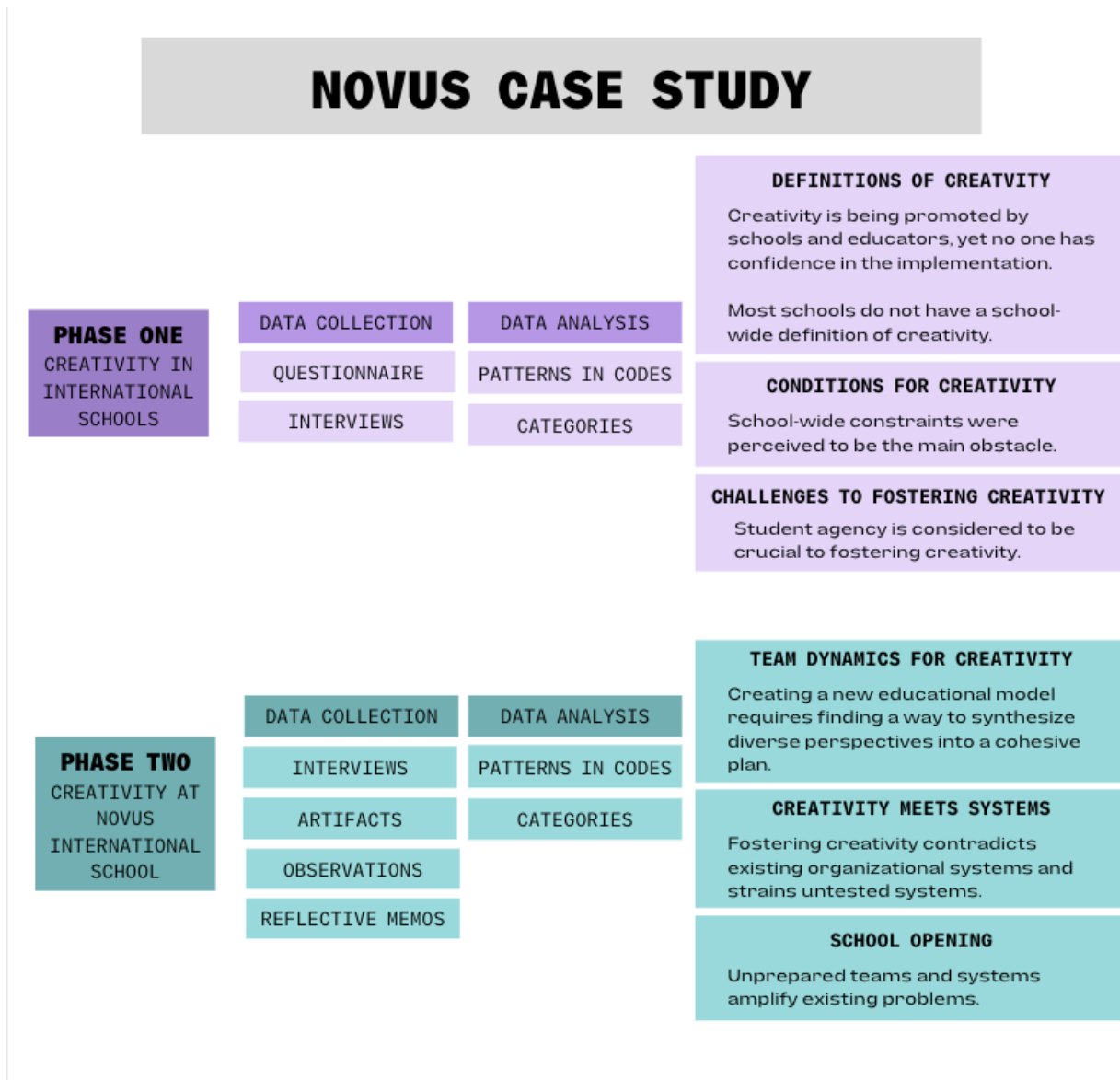


Figure 34. Overview of the case study.

the status of creativity in international schools. Recognizing the broader context of creativity within the international school landscape was paramount to providing a benchmark for the NOVUS findings. A questionnaire, disseminated to international school educators, served as the data collection tool for this phase, the primary objectives were to collect data on creativity perceptions and identify the shared components of creativity-focused schools. In analyzing the responses, I discerned crucial findings about creativity in the international educational arena.

From November 2019 to June 2020, in Phase Two of the research, I undertook an in-depth exploration of NOVUS International School. I interviewed Learning Design Team members, reviewed pertinent documents such as promotional materials and the school's website, made direct observations of NOVUS's operations, considered reflective accounts from NOVUS staff, and had follow-up interviews with the school team. I coded and analyzed the evidence to determine themes. The primary goals of this phase were to accumulate further data on creativity perceptions and creative thinking, identify obstacles in formulating a school model with the explicit intent of fostering creativity, and to document reflections on the leadership approach towards creativity. The comprehensive analysis furnished valuable insights into the practical implementation of a creativity-centric educational philosophy within an international school setting.

Discussion: Key Findings and the Literature

In this section, I reanalyze and substantiate the three findings with extant literature. The overarching question was focused on the story of a single start-up school, attempting to design a school model that addresses creativity.

Common Definition and Mission for Creativity

As explored in Chapter 2, creativity can be defined in many ways. The evidence from the case study strongly suggests a range of definitions utilized by international school educators. Creativity generates novel, valuable, and appropriate ideas or solutions to problems (Hennessey & Amabile, 2010; Sternberg & Lubart, 1999). Understanding creativity involves distinguishing it from imagination and innovation, as Ken Robinson (2011) explains, where imagination consists of generating new ideas, creativity consists of developing original ideas with value, and innovation involves putting new ideas into practice. Imagination is often seen as an inherent trait, while creativity requires the development of valuable ideas. The concept of creativity is multifaceted, and several researchers have proposed different models to understand its complexity. Hennessey and Amabile (2010) suggest a systems view of creativity, considering interrelated forces operating at multiple levels. Csikszentmihalyi's (1996) systems model emphasizes the domain, field, and person as critical components in recognizing creative ideas. Rhodes' Four Ps model includes the person, process, product, and press (the environment) as aspects of creativity (Rhodes, 1961). Critical thinking plays a crucial role in the creative process by evaluating and refining new ideas, while Robinson categorizes creative ideas into combinational, exploratory, and transformational types (Azzam, 2009; Robinson, 2011). Understanding these dimensions of creativity provides a comprehensive view of its nature and implications in various domains.

While arriving at a common definition of creativity might be complex, developing a shared understanding and framework for fostering creative abilities and outcomes is necessary. A shared understanding of creativity enables educators, administrators, and stakeholders to align their goals, expectations, and practices related to creativity in the educational context. Further, a

common understanding achieved through discussion and agreement promotes consistency and coherence in curriculum design, instructional strategies, and feedback methods. Runco and Jaeger (2012) emphasize that educators' shared understanding of creativity enhances instructional effectiveness, as teachers can design learning experiences that explicitly target creative thinking skills and behaviors. Furthermore, a shared definition of creativity helps to establish a foundation for collaboration and interdisciplinary work, facilitating the cross-pollination of ideas and innovative approaches across subject areas. By establishing a common understanding of creativity, schools can create a supportive environment that nurtures and values creative thinking, ultimately preparing students for the challenges and opportunities of a rapidly changing world (Sawyer, 2011a).

Many schools represented in the questionnaire did not have a school-wide definition of creativity, nor did NOVUS, and more than having a common definition is needed. As a leader, ensuring the actualization of a common definition of creativity requires proactive steps to foster a shared understanding and promote its implementation within the school community.

Conversations about fostering creativity should be frequently referenced and ideas integrated into curriculum planning and decision-making. Leaders providing opportunities for teachers and staff to enhance their understanding of creativity and its practical implications in teaching and learning (Runco & Chand, 1995) will further the cause. Professional development workshops, seminars, and training sessions can be organized, inviting experts in the field of creativity to share research, best practices, and innovative strategies (Sawyer, 2012). Establishing collaborative professional learning communities, where educators can engage in dialogue, share ideas, and collectively develop approaches to foster creativity in the classroom (Lieberman & Mace, 2010), requires skilled leaders.

Team Dynamics for Creativity

In a school, interactions between teachers and students occur primarily in isolation. However, without a collaborative culture, interdisciplinary approaches, and shared decision-making and professional development opportunities among educators, an “egg crate mentality” forms. The “egg crate mentality” refers to a hierarchical organizational structure in schools characterized by isolated, individualistic, and compartmentalized practices, where each classroom or department operates independently with limited collaboration and communication between them (Tichnor-Wagner, 2015). The term highlights the metaphorical image of separate compartments resembling an egg crate, with little interaction or integration between them. This mentality can hinder interdisciplinary collaboration, limit innovative teaching practices, and impede the development of a holistic educational experience for students.

A cohesive and collaborative team with a single mission is essential for achieving collective goals, and maximizing organizational effectiveness is essential for a team to design a creativity-focused school. Coherence refers to the degree to which team members share a common understanding of the team's goals, values, and objectives (Elmore, 2004; Forman et al., 2018). Cohesion relates to interpersonal relationships and emotional bonds among team members. A unified team with a common purpose ensures that individual efforts are aligned towards a unified direction, minimizing conflicts and enhancing overall productivity. The research on creativity suggests the need for various soft skills to be creative, many of which define a strong team.

Collaboration within such a team fosters the exchange of diverse perspectives, expertise, and ideas, leading to innovative solutions and better decision-making. Sawyer (2012) argues that exposure to new ideas and experiences can spark creativity and lead to new insights. Experiences

lead individuals to broaden their understanding of the world and identify new possibilities, cultivating their creative thinking skills. The NOVUS planning team was gathered for the diversity in their experiences and shared the same passion for school innovation. The challenge of bringing any new team together is uniting them under a clear, single mission. Research supports that coherent teams with a shared mission outperform teams with fragmented goals or lacking collaboration (Dixon et al., 2018; Wageman et al., 2012). Many teams struggle, as evidenced in the NOVUS story. The goal of NOVUS was clear, to develop a different school model to meet the need for more creative thinking skills. However, the team needed to be united under a single mission and vision for the school. Not developing a coherent mission led to misunderstandings about the goals; my analysis indicated that we needed to be in agreement about the vision and goals. Team members can leverage their complementary skills and strengths, capitalize on synergies, and overcome challenges more effectively by co-developing and working together toward a common objective.

A team developing creative ideas requires more than just divergent thinking and understanding multiple perspectives. DeRosa (2016) states that creativity requires cognitive and non-cognitive elements. Non-cognitive elements include emotional intelligence, motivation, and resilience. Emotional intelligence allows individuals to recognize and manage their emotions and understand and empathize with others. Motivation drives individuals to pursue their creative goals and persist in facing obstacles. Resilience helps individuals bounce back from failure and setbacks. These three things can be described as a growth mindset.

Clear consensus on how the team will achieve success is crucial, even if the team believes they are on the same page regarding goals and outcomes. Educators often feel the same moral imperative to support children as they learn and develop, which attracts them to the

teaching profession. However, more than this commonality is needed for actual coherence and cohesion. For the NOVUS planning team, the evidence indicates that each member was committed to the project due to their desire to change the traditional model of schools. While the motivations were aligned, opinions about how schools needed to change differed based on the individual. Discussions might have led to compromise and agreement to prioritize the needed changes would have helped direct the team's work and feedback.

Strong Leadership

Additionally, a cohesive and collaborative team cultivates a supportive and inclusive environment in which trust, communication, and cooperation flourish, ultimately promoting individual satisfaction, engagement, and commitment to the team's mission (Edmondson, 2012; Hogg, 2016). Elmore (2002) and Yurmovsky et al. (2020) highlighted the significance of effective leadership in creating a school culture that supports continuous improvement and professional learning for teachers. Elmore emphasized the importance of distributed leadership, wherein leadership responsibilities and decision-making are shared among various stakeholders in the educational system. A core leadership group can promote diversity, inclusivity, and ethical practices, fostering an organizational culture that values fairness, transparency, and integrity (Brown et al., 2005; Yukl, 2010).

Developing the school environment requires deliberate and strategic decisions and guidance from strong leadership. In the NOVUS case study, as the founding team, we were expected to serve as the leadership team once the school opened to students. We needed to co-develop a clear vision to engage strategic thinking and inspire and motivate others toward shared goals. We were expected to possess strong decision-making skills, communicate effectively, and foster an environment of trust and accountability within the team.

Effective leadership team involvement is vital for providing a clear vision, setting strategic objectives, and creating a roadmap for successful change implementation. Leaders play a pivotal role in achieving organizational objectives and sustaining long-term success by providing guidance, harnessing collective potential, and cultivating a positive organizational climate. During the planning year, we were expected to develop a cohesive plan for implementation and support to ensure that all NOVUS members are aligned, engaged, and adequately supported. Professional development is an essential component of school reform, as it equips those involved with the necessary knowledge and skills to guide the change effort and effectively support employees through the transition. A change model, such as Kotter's Eight-Step Change Model, can serve as a valuable framework for the leadership team to develop a cohesive plan (Kotter, 1996). Following the steps outlined in the change model, the leadership team can identify and address potential challenges, engage stakeholders, communicate effectively, and establish a supportive and collaborative environment for change. The involvement of a cohesive leadership team and a well-developed plan ensures that the change initiative is implemented smoothly, with the necessary support structures in place to facilitate successful outcomes.

In the NOVUS case study, we failed to formalize a clear plan during our planning year. In addition, not all members felt comfortable in a leadership role that entailed supporting teachers through changes. More learning on our part as leaders was required for a successful implementation of a new school model.

Design Thinking and Creativity

Design thinking is a model in which creative thinking skills are required for an open-minded approach willing to consider multiple perspectives and take a human-centered approach

to problem-solving (Brown, 2008). The human-centered approach emphasizes empathy, experimentation, and iteration to address real-world challenges and promote interdisciplinary learning (IDEO, 2015b). Visual aids, storytelling, and role-playing support concept comprehension and empathy development (Razzouk & Shute, 2012), while collaboration and iterative learning occur through group activities and discussions (Scheer et al., 2012).

The design thinking process provides a structured framework for generating innovative solutions. The iterative process typically consists of stages such as empathizing with users, defining the problem, ideating potential solutions, prototyping, and testing (IDEO, 2015b). Individuals can employ brainstorming, mind mapping, or free writing to facilitate divergent thinking. Divergent thinking is vital to developing creative thinking skills. It entails generating multiple ideas or solutions to a problem instead of relying on a single approach that can then contribute to developing a more thoughtful but cohesive vision. Design-thinking models stress the importance of these methods to foster a high level of idea generation without the hindrance of self-censorship or criticism. Through this process, individuals can identify new possibilities and connections that may have been overlooked previously (Hennessey & Amabile, 2010; Sawyer, 2012). The process of iterating and refining ideas based on feedback also supports the idea of exposure to diverse perspectives, as it involves taking feedback from users and stakeholders with different backgrounds and experiences (Kim & Mauborgne, 2015).

Design thinking mindsets and the design thinking process work in tandem to foster innovation, problem-solving, and user-centered design. Design thinking mindsets encompass a set of attitudes and beliefs that cultivate a creative and empathetic approach to addressing complex challenges. These mindsets include embracing ambiguity, having a bias towards action, fostering collaboration, maintaining a human-centered focus, and promoting a growth mindset

(Brown, 2008; Kelley & Kelley, 2013). The design thinking mindsets complement the design thinking process by encouraging individuals to embrace uncertainty, take risks, collaborate effectively, empathize with users' needs, and persist in facing challenges. Organizations and individuals can cultivate a holistic approach to problem-solving and innovation that combines empathy, creativity, and practicality by integrating design thinking mindsets with the design thinking process. Identifying these mindsets and reflecting consistently supports each individual's growth in each mindset. It also keeps the focus on the mindset rather than the process. The Learning Design Team did not have a protocol or habit of deep reflection throughout the planning year. As a result, we often felt we were superficially using the design thinking process.

As the design thinking process is personal and adaptive to each context, mindsets must be cultivated and emphasized more in problem-solving situations. Even if a design thinking process is followed, often only some participants have the flexible mindsets necessary for effectively designing solutions for complex problems and conferring to reach a consensus. While divergent mindsets are helpful for a complex analysis of the problem and garnering the ability to solve the problem creatively, in the end, the collective group needs to have a coherent approach. This applies to educators using the process to solve problems in their school context and how they implement the design thinking process into their curriculum.

To emphasize a key point, the design thinking process emphasizes empathizing and understanding the user, but that could and should apply to the co-designers. In NOVUS's case, the Learning Design Team was planning a school model without applying empathetic understanding to each other's experiences and without fully understanding the students attending the school because planning occurred before students were enrolled. However, there might have

been ways to mitigate these factors. A better understanding of the school's direction and more realistic projections of the school population would have provided valuable insight for the planning team. Connecting and learning from similar international schools in Thailand and other countries would have helped the LDT better understand the student body's needs. After synthesizing the gathered information and understanding the likeliest scenario, a composite and standard profile of the student body we were designing for would have helped the LDT develop aligned and appropriate prototypes for the situation's reality.

Schoolwide Constraints

NOVUS and other international schools often face challenges meeting external constraints while implementing their unique educational approaches. Navigating the potential barriers requires a strong understanding of the external constraints and dedication to the core mission. Accreditation, for example, is a process that ensures schools meet specific standards and quality criteria set by external bodies, such as regional accrediting agencies or national education departments. These standards are designed to ensure accountability and maintain educational quality. However, they can sometimes limit the flexibility and autonomy of innovative schools, as their non-traditional approaches may need to align better with the established criteria. As McDonough (2016) noted, the tension between innovation and external constraints arises because accreditation standards typically reflect traditional educational models and may need to account for some schools' innovative practices. The misalignment can create challenges for innovative schools in demonstrating compliance and may require them to navigate the accreditation process creatively. Balancing the pursuit of innovative educational practices while meeting external accreditation requirements is a delicate task that requires ongoing dialogue and collaboration between innovative schools and accrediting bodies to find common ground and

ensure that accreditation processes support, rather than hinder, innovation and improvement in education.

The data from the questionnaire and experience of the NOVUS Learning Design Team indicates that schoolwide constraints or external expectations significantly hindered fostering creativity in a school context. In NOVUS International School's case, the tensions between the Thai Ministry of Education (MOE) license, the Western Association of Schools and Colleges (WASC) accreditation standards, and the New York State Standards needed to be deeply understood to find an appropriate solution. These external constraints were compounded when the marketing efforts further placed expectations from prospective parents and shaped unrealistic and vague public perceptions.

Isomorphism at Play

Isomorphism is the tendency of organizations or social entities to create similar structures, processes, or practices, despite their intention to change. Isomorphism is driven by a desire for legitimacy, conformity, or the need to navigate complex environments. Organizations may adopt similar structures, procedures, technologies, or approaches to align with prevailing expectations, norms, or successful models instead of relying on creative solutions. The NOVUS case study is rife with examples of isomorphism.

The concept of isomorphism, initially introduced by sociologists DiMaggio and Powell (1983), states that organizations face pressures to conform to external rules and expectations and can be categorized into three main types: coercive, normative, and mimetic. Coercive isomorphism occurs when organizations adopt similar structures or practices due to external pressures, typically from powerful entities such as regulatory agencies or governments. In NOVUS's case, this refers to the Thai MOE, WASC, and New York State Standards. The

tensions surrounding how we would incorporate and meet external expectations arose from opposing desires, on one end, to conform to these demands to ensure compliance and on the other, to push against the requirements to test their limits. Coercive isomorphism seeks to ensure conformity rather than effectiveness or efficiency.

Mimetic isomorphism occurs when organizations imitate or emulate successful models or practices of other organizations. The isomorphism is driven by environmental uncertainty or ambiguity -- particularly when organizations face novel or complex challenges. Organizations may mimic others they perceive as successful, believing that adopting similar structures or practices will lead to positive outcomes. However, mimetic isomorphism can result in a lack of innovation or reliance on outdated approaches. As challenges emerged, team members with experience in innovative schools began to lean on other models to emulate. Their experiences dominated their design thinking. As my background was in more traditional contexts, I often resisted mimetic isomorphic tendencies in discussions.

Normative isomorphism arises from professional or social expectations and norms. Organizations voluntarily adopt structures, processes, or practices to gain legitimacy and recognition within their professional or social networks. Normative isomorphism is driven by the desire to be seen as credible and conform to established professional standards or societal norms. For us, the social expectations of prospective parents were often exacerbated by our marketing efforts. The investors and team members sought to establish NOVUS's credibility in the international and parent community. The time spent on marketing ideas and actions at times derailed efforts to address curricular and pedagogical discussions.

Emergent Conceptual Framework

As discussed, strong leaders who understand a change model are critical to fostering creativity in schools. In developing a change model that would support creativity in schools, I analyzed Kotter's Eight-Step Model and Fullan's Change Model. Kotter's model emphasizes the importance of creating a sense of urgency, forming a guiding coalition, developing a vision and strategy, communicating the vision, empowering others to act on the vision, generating short-term wins, consolidating improvements, and anchoring changes in the school's culture (Kotter, 1996). Fullan's model focuses on the "change core" concept and the interplay between moral purpose, relationships, knowledge, and coherence. It emphasizes the importance of shared vision, capacity-building, collaborative cultures, and distributed leadership in driving successful school change (Fullan, 2001).

Based on the findings, the change model for fostering creativity (see Figure 35) presents an emergent conceptual framework for fostering creativity. Three key pieces include: (1) Relevant Curriculum and Pedagogical Practices, (2) Practices Resources, Systems, & Processes, and (3) Cohesive Team. Without the three components, change may still occur, but the change is not sustainable or profound. Then I explore what may happen if only two of the components are in place.

Relevant Curriculum and Pedological Processes

The first element describes the curricular and pedological practices required to foster creativity. A relevant curriculum and pedagogical practices are vital in fostering creative thinking in schools. Educators can create an environment that nurtures students' creative abilities by adopting specific approaches and strategies. I explore key elements that contribute to fostering creative thinking, including the flexible use of standards, student-driven

CHANGE MODEL FOR FOSTERING CREATIVITY

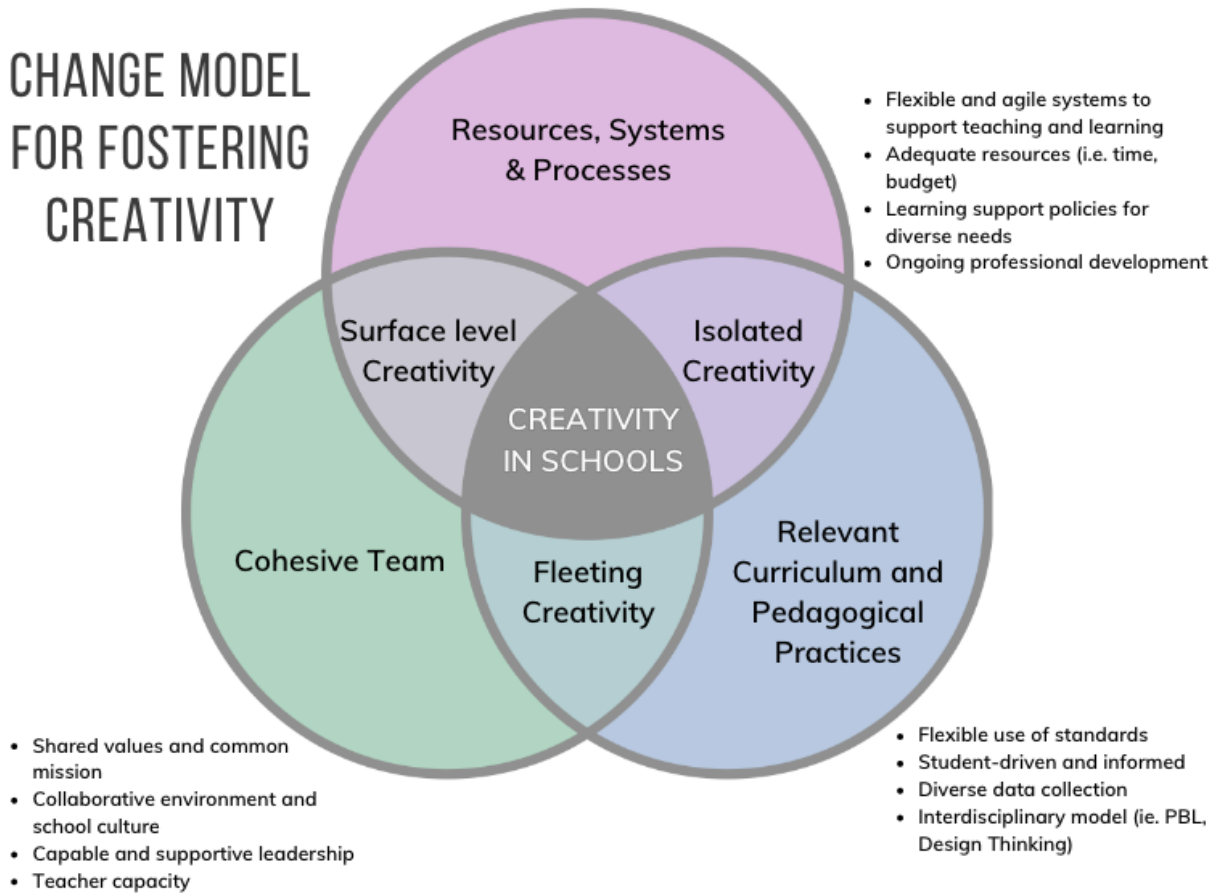


Figure 35. Change model for fostering creativity.

and informed practices, diverse data collection methods, and an interdisciplinary model such as project-based learning (PBL) and design thinking.

Plucker and Makel (2010) found that, although many schools value creativity, the curriculum often prioritizes memorization and rote learning, neglecting creative thinking. The curriculum should focus on conceptual understanding rather than superficial coverage of facts. The NGSS, for instance, incorporates crosscutting concepts to deepen conceptual understanding and improve science and engineering education (National Research Council [NRC], 2013). Flexibility in using standards is essential to promote creative thinking. Moreover, creativity requires domain-specific knowledge, as emphasized by Csikszentmihalyi's creative system idea. Constructivist and inquiry-based approaches promote knowledge acquisition and transfer, fostering creative thinking skills (Dewey, 2015). Therefore, a curriculum that integrates inquiry, conceptual understanding, and knowledge acquisition is essential for nurturing creativity in students.

In addition, a crowded curriculum may hinder students' ability to engage in sustained creative endeavors. While standards provide a framework for educational goals, educators should be free to adapt and personalize their implementation to meet students' diverse needs and foster creativity (Beghetto, 2010). Allowing flexibility within the standards allows teachers to create space for students to explore unique interests, apply creative problem-solving strategies, and think critically beyond rigid constraints.

Student-driven and informed pedagogical practices empower students to take ownership of their learning, fostering creative thinking. Creativity can be developed by explicitly incorporating creative thinking skills and processes in lesson plans, designing interdisciplinary projects that encourage innovative thinking, and providing opportunities for student choice,

exploration, and self-expression (Craft, 2005). When students have a voice in their education and can influence the learning process, they become more engaged and invested in their work (Cook-Sather, 2002). Student choice, self-directed projects, and collaborative decision-making allow students to pursue their interests, solve real-world problems, and develop creative solutions (Fulton & Britton, 2011). Educators cultivate a culture that supports and nurtures creative thinking by valuing student input and encouraging their agency.

Diverse data collection methods provide educators with a comprehensive understanding of students' progress and creative thinking abilities. Traditional assessments, such as tests and quizzes, may only capture part of the full range of creative thinking skills. Therefore, educators should incorporate a variety of assessment approaches, including portfolios, performance-based assessments, and self-reflections (Runco, 1992). These methods support students to showcase their creativity, reflect on their growth, and provide evidence of their creative thinking processes. By employing diverse data collection methods, educators gain a more holistic view of students' creative abilities and can provide targeted support and feedback to foster further growth. Assessment practices should also align with the definition of creativity, emphasizing evaluating creative outcomes and processes (Cropley, 2006).

An inquiry-based model of instruction is recommended to foster curiosity and creativity in students. Beghetto and Kaufman (2014) emphasize the significance of creating a culture of inquiry that encourages students to ask questions, explore, and investigate. Lyn and Lin (2017) and Şahin (2016) demonstrated the positive impact of inquiry-based learning on developing students' creative thinking skills. The inquiry model provides opportunities for exploration, problem-solving, and critical thinking, facilitating the development of creativity.

In addition to an inquiry-based approach, an interdisciplinary model, such as Project-Based Learning (PBL) or design thinking, promotes creative thinking by integrating different subjects and fostering collaborative problem-solving. PBL engages students in authentic, real-world projects that require critical thinking, creativity, and collaboration. Similarly, design thinking provides a framework for students to approach complex problems with empathy, creativity, and an iterative process (Brown, 2008). Both models emphasize interdisciplinary connections, hands-on experiences, and the application of creative thinking skills in solving authentic problems. By adopting these approaches, educators create opportunities for students to explore, experiment, and develop their creative thinking abilities across multiple disciplines.

In conclusion, a relevant curriculum and pedagogical practices that support creative thinking should incorporate flexible use of standards, student-driven and informed approaches, diverse data collection methods, and an interdisciplinary model such as PBL or design thinking. By embracing these elements, educators can create an environment that fosters students' creative thinking skills, empowers their agency, and prepares them to thrive in an increasingly complex and innovative world.

Resources, Systems, and Processes

The second essential component of the change model includes required resources, systems, and processes in a school to support educators to focus on fostering creativity. Flexible and agile school policies and processes foster personalized approaches to teaching and learning, recognizing and accommodating students' diverse needs, interests, and learning styles. Team meeting policies that promote collaboration enable educators to share best practices, engage in professional learning communities, and foster a culture of collaboration and creativity throughout the school.

Teachers need adequate resources, including but not limited to time and budget allocations. Planning for dedicated time for creative exploration is crucial. Creativity requires a process of ideation, experimentation, and refinement, which takes time. When schools allocate time within the curriculum for students to engage in open-ended projects, problem-solving activities, and creative pursuits, they can delve deeper into their interests, generate multiple ideas, and explore innovative solutions (Cropley, 2006). Nurturing creativity requires access to a wide range of resources and materials. Schools must ensure that students can access tools, technologies, materials, and spaces supporting their creative endeavors. Some examples include art supplies, digital resources, makerspaces, and other facilities encouraging hands-on exploration and experimentation (Koepke & Rosenfeld, 2019). Having well-equipped spaces and resources allows students to bring their ideas to life, experiment with different materials, and engage in multidisciplinary projects that foster creativity.

Professional development programs can provide educators with strategies, resources, and techniques to integrate creativity into their teaching practices, design open-ended tasks, and foster a classroom culture that values and supports creative thinking (Beghetto & Kaufman, 2013). Teachers must develop their creative thinking skills and pedagogical approaches that promote and nurture creativity in students (Craft, 2005).

Cohesive Team

The last component in my change model for creativity in schools is a cohesive team. A cohesive team is crucial for the success and effectiveness of any organization and consists of several vital elements contributing to its overall effectiveness and ability to achieve shared goals. I discuss the essential components of a cohesive team, including shared values, a common mission, a collaborative school culture, capable and supportive leadership, and teacher capacity.

Shared values and a common mission are fundamental aspects of a cohesive team. A team with shared values demonstrates a collective understanding and agreement on the core principles and beliefs that guide their actions and decision-making processes (Hackman & Wageman, 2005). A shared value system creates a sense of unity and provides a clear direction for the team's efforts. Additionally, a common mission statement outlines the team's purpose and goals, serving as a unifying force that aligns individual efforts toward a collective vision (Daft, 2014). Having shared values and a common mission enables team members to work cohesively, collaborate effectively, and make decisions in line with the team's overarching objectives.

A collaborative environment and school culture are crucial for fostering teamwork and cohesion within a school. Collaboration involves the active participation and engagement of all team members, promoting open communication, information sharing, and joint decision-making (Johnson & Johnson, 2013). A collaborative environment encourages team members to share their knowledge, skills, and perspectives, leading to innovative approaches and problem-solving. Additionally, a positive school culture that values collaboration and teamwork creates a sense of belonging, trust, and support among team members (Deal & Peterson, 2016). A collaborative environment and positive school culture foster a sense of unity and create the conditions necessary for effective teamwork and cohesion.

Capable and supportive leadership is vital in establishing and maintaining a cohesive team. Effective leaders provide guidance, support, and clear direction to team members, facilitating their professional growth and development (Avolio & Gardner, 2005). Capable leaders also promote a shared vision, establish norms of behavior, and model the values and expectations of the team. Supportive leadership involves recognizing and appreciating team members' contributions, providing constructive feedback, and addressing conflicts or challenges

that may arise within the team (Kouzes & Posner, 2017). The presence of capable and supportive leaders helps to build trust, motivation, and a sense of collective responsibility within the team. Furthermore, ongoing reflection and evaluation are crucial. Leaders should regularly assess the implementation of creativity, seeking feedback from teachers, students, and other stakeholders (Amabile et al., 1996). The feedback can inform adjustments and improvements in policies, practices, and resources to better support and promote creativity in the school environment.

Teacher capacity refers to individual teachers' skills, knowledge, and expertise within the team. A cohesive team benefits from highly competent and skilled teachers continuously developing their professional expertise (Hargreaves & Fullan, 2012). Teachers with strong pedagogical knowledge, content expertise, and a commitment to ongoing learning contribute to the overall effectiveness and success of the team. Supporting teachers with professional development opportunities focused on fostering creativity is essential. Professional development and collaborative learning communities can enhance teacher capacity, fostering a culture of continuous learning and improvement within the team (Little, 2006). A cohesive team can leverage its members' collective expertise and capabilities by investing in teacher capacity to achieve shared goals and deliver high-quality education.

In summary, a cohesive team in a school setting requires shared values, an established and clear mission, a collaborative environment and school culture, capable and supportive leadership, and teacher capacity. These essential components create a strong foundation for effective teamwork, collaboration, and achieving shared goals. By fostering these elements within a school team, educational leaders can cultivate a cohesive and supportive environment that promotes the professional growth and success of both individuals and the team as a whole.

Ineffective Outcomes of Change Efforts

In the proposed change model for creativity, the ideal scenario is for schools to develop all three components described above for authentic and sustainable change in developing creative thinking skills. However, I discuss the implications when schools do not sufficiently address all three areas. I classify the resultant change into three categories: "surface-level creativity," "isolated creativity," and "fleeting creativity."

Surface-Level Creativity

The term "surface-level creativity" signifies nominal changes when a school establishes the necessary systems, procures the resources, and has a cohesive team. However, these changes may be insignificant or absent. Although any shift towards nurturing creativity constitutes progress, surface-level changes do not profoundly influence student learning. The lack of impact is attributable to the school's failure to implement relevant curriculum and pedagogical practices (Craft, 2012). For instance, a school may establish a Makerspace and allocate time for students to use it. Still, its impact on students' creative thinking skills is negligible without purposefully incorporating it into the curriculum. Another instance could be a school that allocates time for creativity in classrooms but neglects to accumulate evidence of growth through authentic assessments to measure progress and provide feedback (Amabile, 1996). Affluent schools, such as international institutions, often exhibit such patterns.

Isolated Creativity

The term "isolated creativity" encapsulates the ambiguous change that arises when schools have processes and resources, a relevant curriculum, and pedagogical practices yet lack team cohesion. The resultant change may be ambiguous and elusive, confined to specific classrooms with teachers comfortable integrating creativity into meaningful, interdisciplinary

learning. The isolation could lead to learning disparities based on the individual teacher, creating "silos." The inconsistent addressing of creative thinking skills can stunt the growth and development of student creativity. Schools can address isolated creativity by investing time and resources to foster a collaborative school culture, allowing teachers to learn from each other (DuFour et al., 2008). It also involves developing a clear mission and vision for nurturing creativity, including a shared working understanding of creativity embedded into decision-making.

Fleeting Creativity

Fleeting creativity, a term I have coined, refers to transient changes resulting from a cohesive team and relevant curricular practices. Such change is unsustainable and dependent on the current leadership or teaching staff. In international schools, where staff turnover is typical, the necessity for enduring change is heightened (Mancuso et al., 2010). When school reform initiatives lack permanence, teachers may become disillusioned as new goals dilute efforts to foster creative thinking. Cuban (2012) terms change of this nature dynamic conservatism – change may occur for a short time but not last. In that case, change agents revert to prior forms of acting and systemic change suffers. Furthermore, systems and processes are not aligned with promoting creativity. In that case, ideas may not materialize due to resource deficiencies or an overcrowded timetable, thereby restricting teachers' ability to engage in meaningful learning experiences to enhance students' creative thinking skills.

Implications

My case study investigates how a new international school developed a school model to intentionally foster creativity, aiming to provide insights about how international schools can

address this goal. In the following sections, I detail the leadership practice, policy, and research implications of the study's findings.

Implications for Educational Leadership Practice

The findings emphasize the need for strong leadership for change in the development of creative thinking skills in students. Leadership plays a pivotal role in shaping and maintaining the culture of a school. School culture, often referred to as "the way we do things around here," includes shared expectations, values, beliefs, norms, and practices that guide the behaviors of staff, students, and even parents. For any school reform, school culture plays a significant role. Deeper learning and innovation have become critical areas of focus within the field of education. However, while there has been a surge of interest in promoting deeper learning and innovation in educational settings, there is a clear need for further research on the specific leadership skills that can effectively catalyze these processes.

Deeper learning is a multifaceted educational approach designed to engage students in the active construction of complex knowledge and skills, including creativity. It also encompasses critical thinking, problem-solving, collaboration, self-directed learning, and mastery of core academic content (William & Leahy, 2015), representing a shift from traditional education paradigms. The transition from focusing on rote memorization and test performance to a learner-centered, competency-based model requires a unique set of leadership skills. Identifying, understanding, and nurturing these skills can significantly impact the successful implementation of deeper learning approaches.

Moreover, cultivating an environment conducive to innovation requires leadership skills beyond those traditionally associated with school administration. Leadership is pivotal in fostering innovation, encouraging risk-taking, and facilitating adapting and adopting new

teaching and learning methods (Hargreaves & Fullan, 2012). Consequently, a more profound understanding of how leadership can effectively catalyze and sustain innovation in education is crucial.

In addition, leaders in a school attempting to change to a more creative approach to teaching and learning need to build strong partnerships with all stakeholders, including parents. Overcommunication is a vital strategy for leaders, especially when implementing change within an organization such as a school. For parents and prospective parents, understanding the rationale, procedures, and potential benefits of any change is essential to gaining their support and cooperation. Overcommunication demonstrates transparency, which can cultivate trust. When leaders are open about their intentions, strategies, and progress, parents are more likely to believe in their competence and integrity (Luskin, 2018). Change can be complex and difficult to understand. Regular and detailed communication helps parents fully comprehend the changes, why they are necessary, and how they will affect their children (Elmore, 2004). Change often encounters resistance, particularly when people feel left out of the process. Overcommunication can help mitigate resistance by involving all stakeholders in the conversation and addressing their concerns proactively (Luskin, 2018). Leaders who over-communicate during times of change are more likely to gain parents' understanding, support, and active participation, which can significantly enhance the effectiveness and sustainability of their efforts.

As international school communities are diverse, Diversity, Equity, Inclusion, and Justice (DEIJ) leadership practices play a pivotal role in fostering school reform for numerous reasons. For one, inequitable educational systems can stifle student potential and creativity. Emphasizing DEIJ ensures that all students, regardless of their backgrounds, receive the resources and opportunities they need to succeed (Gay, 2018). A diverse and inclusive environment enriches

the learning experience by exposing students to various perspectives and ideas. The exposure can enhance critical thinking skills and prepare students for an increasingly diverse and globalized society (Banks & Banks, 2010). In addition, an inclusive and just school community is more likely to build strong relationships among students, staff, and parents. These relationships can enhance cooperation, trust, and shared commitment to school improvement (Theoharis, 2009). It can also enhance the sustainability and impact of reform efforts by engaging a broader range of stakeholders in the change process.

Lastly, while there is emerging research on these topics, many of these studies are context-specific, and there is a need to develop a leadership framework for deeper learning. International school leaders often utilize various leadership frameworks to guide their practices and strategies. Some of the most employed include transformational, instructional and servant leadership. Transformational Leadership focuses on leaders who inspire and motivate their team members toward a shared vision. Transformational leaders foster a culture of trust, encourage innovation, and stimulate intellectual growth, which is particularly important in international schools due to their diverse staff and student populations (Bass & Riggio, 2006). Instructional leaders focus on improving student learning outcomes by cultivating a robust instructional program and promoting a positive school climate. They deeply understand teaching and learning and work closely with teachers to improve instructional practices (Hallinger, 2005). Servant leaders prioritize the needs of their team and aim to serve others rather than accrue power. The framework is beneficial in the culturally diverse setting of international schools, where mutual respect and understanding are crucial (Greenleaf, 1977).

In conclusion, further research on the leadership skills necessary for deeper learning and innovation is essential to support the ongoing evolution of education in the 21st century. The

research can provide actionable insights and guidance for educational leaders seeking to implement effective strategies for deeper learning and innovation in their schools.

Implications for Educational Policy

If schools need to change, the policies that impact school reform also need to adapt. For example, meeting WASC accreditation standards can present challenges for innovation in schools. While accreditation ensures the credibility and quality of educational institutions, the standardized criteria may require more flexibility and freedom for innovative approaches. While the standards leave room for interpretation, the evidence required left limited room for experimentation and innovative pedagogical approaches that deviate from traditional methods. The WASC standards are based on established educational practices, and while it can ensure a certain level of quality, at times, it hinders the integration of emerging innovative practices and methodologies. Meeting accreditation standards while simultaneously fostering innovation requires balancing accreditation demands with the need for innovation.

To address these challenges, schools pursuing innovation can engage in thoughtful dialogue with accreditation bodies, collaborate with other innovative schools, and leverage opportunities for sharing best practices. It is essential to demonstrate to accrediting agencies that innovation can coexist with meeting the established standards and that alternative approaches can effectively support student success and achievement. As more schools engage in this work, it will pressure accreditation bodies to adapt their requirements and processes.

In addition, universities need to continue to revise their admissions policies. Universities significantly shape many students' educational trajectories and aspirations worldwide, including those from international schools. Many parents choose international schools because of their belief that they provide high-quality education and a pathway to overseas study. Changes in

university admissions policies and close collaboration with high schools and international schools are critical for several reasons. Universities need to adapt their admissions policies to assess students based on current and relevant criteria (Bridgeman et al., 2008). By revising admissions policies, universities can work towards making higher education more accessible and equitable. Changes could involve recognizing a broader range of qualifications, providing opportunities for students from diverse backgrounds, or incorporating more holistic assessments of applicants' abilities and potential (Espinosa et al., 2015). Universities can also help alleviate the pressure of university acceptance by working with international schools to help students and parents navigate the process more effectively and make more informed decisions (Grodsky & Riegle-Crumb, 2010). By collaborating with these schools, universities can help ensure that they meet these aspirations and provide international students with the opportunities they seek (Choudaha et al., 2012).

Implications for Research

The potential research field surrounding international school creativity is vast and complex. The complexity offers various avenues for further research to address unanswered questions and deepen our understanding of how to cultivate creativity best. In this section, I consider some potential areas for further research.

First, more research is needed on how to assess and measure creativity effectively. Many traditional assessment methods may need to capture creative thinking or problem-solving. Exploring diverse methods, such as portfolio assessments or performance-based evaluations, might yield valuable insights (Beghetto & Karwowski, 2017). Assessments will provide feedback to learners about their progress in developing their creative thinking skills. Another important role of assessment is to provide evidence of program efficacy to stakeholders, such as

parents and school leaders. Creativity is referred to as an important “soft skill,” implying that it has less importance than academic skills. Supposedly schools are shifting towards addressing creative thinking skills. In that case, better assessment tools will provide more insight for teachers in planning subsequent learning for their students and justification for parents by articulating the growth made by their children.

Secondly, further research is needed to explore teachers' strategies to foster creativity and how these can be best supported within an international school context. Strategies might be in the realm of curriculum design or classroom management. Further research could also examine how teachers design and implement curriculum to encourage creative thinking. It would be valuable to explore how teachers incorporate creative tasks within various subject areas, balance the demands of standardized curricula with opportunities for creative exploration, and design assessments that capture students' creative abilities (Craft, 2013). Future studies might focus on classroom management strategies that support creativity, including strategies for encouraging divergent thinking, promoting risk-taking and failure as part of the creative process, and managing the complexity and potential chaos that can accompany creative endeavors. How teachers create an emotionally supportive and open classroom environment, which is believed to be beneficial for creativity, could also be investigated (Kaufman & Beghetto, 2009). Further, it would be valuable to understand more about teachers' beliefs and attitudes toward creativity. Understanding these beliefs and attitudes could help to explain why certain teachers might be more successful in fostering creativity than others and could help to inform professional development initiatives (Diakidoy & Kanari, 1999). In essence, the research should focus on furthering our understanding of how teachers, as key facilitators in the educational process, can

be better equipped and supported to cultivate creativity among their students within the context of international schools.

Next, international schools cater to diverse cultural groups, so understanding how creativity is perceived and valued across different cultures is paramount. Further research in the area would enhance our understanding of cultural influences on creativity and how to promote it within culturally diverse classrooms (Glăveanu, 2013). Culture might influence the ways individuals engage in and express creativity. For instance, certain cultural contexts might foster conformity or obedience, potentially affecting creative expression. Different cultures might have varying conceptions of what creativity means, how it should be expressed, and the value it holds. For example, some cultures may place a higher emphasis on individual originality, while others might value group innovation or the ability to harmoniously blend new ideas with existing cultural norms (Leung et al., 2008). Research to explore best practices for promoting creativity in multicultural classrooms is critical. Some examples include, integrating diverse cultural understandings of creativity into the curriculum, ways to promote cross-cultural collaboration and creativity, or the development of educational approaches that are inclusive and respectful of various cultural perspectives on creativity (Sternberg, 2003). Studies could examine how teacher training and professional development initiatives can better equip educators with the skills and understanding needed to nurture creativity among a culturally diverse student body (Gay, 2002). Research could probe these cultural variations in understandings of creativity, providing valuable insights to educators in multicultural environments.

Lastly, more longitudinal research could be conducted to assess the long-term impact of creativity education on students' personal, academic, and professional lives. Researchers can examine the influence of creativity education on personal traits such as self-confidence,

resilience, mental flexibility, and problem-solving skills. Also, considering that creative activities often involve risk-taking and uncertainty, these studies could shed light on how early exposure to creativity education may influence individuals' capacity for emotional regulation and dealing with stress over time (Beghetto, 2007). More studies are needed to explore how fostering creativity impacts academic performance across various subjects over the long term. This could extend to how a focus on creativity might influence students' engagement, motivation, and overall attitude toward learning. Creativity has been linked to deeper learning, and a better understanding of complex concepts, and a longitudinal study could offer insights into how these effects sustain and evolve over time (Lucas et al., 2013). Creativity is increasingly recognized as a crucial skill in the modern workforce, particularly in an era characterized by rapid technological advancements and shifting economic landscapes (World Economic Forum, 2020). Longitudinal research could investigate how creativity education influences students' career trajectories, capacity for innovation in their professional roles, and adaptability in the face of changing job requirements. Conducting longitudinal research in these areas may illuminate the sustained impact of creativity education and provide valuable data for educators, policymakers, curriculum designers, parents, and other stakeholders in education.

Leadership Development: Embracing Systems, Teamwork, and Change in Education

In the dynamic and ever-evolving field of education, fostering professional growth is paramount for educators and school leaders. This section explores my professional growth as a leader. Upon reflection, the most significant change in my leadership development is a better understanding of my strengths. In essence, I learned to value my abilities and will be able to leverage them in different contexts better. During the study, three essential components of my professional growth were understanding and valuing systems, a functioning team, and the change

model for effective school reform. Through understanding the value of these elements, I have grown more confident as a school leader. Recognizing these elements enables me to navigate challenges and cultivate an environment where creativity flourishes.

In any successful educational institution, systems play a pivotal role. These structures provide the framework for efficient operations and enable educators to focus on their core responsibilities. As a professional, I have recognized that systems are not solely bureaucratic processes but a means to streamline tasks, allocate resources effectively, and create a cohesive learning environment. For much of my professional career, one of my strengths has been in understanding and implementing systems. By organizing procedures, establishing routines, and leveraging technology, I have enhanced my productivity while supporting the productivity of my colleagues. Effective systems free educators from administrative burdens, enabling them to devote more time and energy to creative teaching strategies and student engagement. By embracing systems, educators can balance structure and innovation, increasing overall effectiveness and student success. More importantly, my understanding of systems' role in an effective school has grown. With my experience at NOVUS, I learned this skill's value and believe it will become a focal point in continuing my path as a leader.

Collaboration and teamwork are essential for promoting growth and achieving collective goals in education. A leader's explicit work fostering team cohesion and synergy is pivotal for success. Creating an inclusive and supportive environment allows a leader to cultivate a team culture that values diverse perspectives, encourages collaboration, and stimulates innovation. As a leader, I have recognized that building a functioning team requires a range of skills, such as effective communication, active listening, and conflict resolution. By establishing clear goals, facilitating open dialogue, and recognizing individual strengths, a leader can harness the team's

collective intelligence. Feedback on my leadership has always focused on my ability to develop relationships with all stakeholders. However, if I am being honest, I downplayed the role my ability has in impacting learning and school culture. Through research and reflection, I understand that by embracing collaboration and empowering team members, educators can benefit from shared expertise, varied perspectives, and collective problem-solving, ultimately enhancing the quality of education.

Change is an inevitable aspect of the educational landscape, proved especially important for leaders during the COVID-19 pandemic. The pandemic profoundly impacted international schools, leading to significant disruptions in their operations and educational delivery. It is important to note that the pandemic heavily impacted my findings, as I made multiple adaptations to the case study methodology throughout the process. The COVID-19 pandemic impacted the work of the NOVUS team. The closure of schools and implementation of remote learning measures to prevent the spread of the virus posed numerous challenges. These challenges included adapting to online teaching and learning platforms and maintaining engagement and motivation in learning environments.

Furthermore, international schools have faced disruptions in student enrollment and admissions, travel restrictions affecting the mobility of students and staff, financial implications due to decreased revenue, increased operational costs, and the need to comply with various health and safety protocols. As the pandemic's ongoing nature and its current uncertainties continue to impact international schools, I am aware of my role as a leader through these challenging times. I believe I have more empathy for individuals' struggles and have developed more tools to support teachers.

Whether it involves adopting new pedagogical approaches, implementing curriculum reforms, or integrating technological advancements, understanding the change model is crucial for driving effective transformation in schools. In order to navigate the process successfully, educators must be cognizant of the various stages of change, such as awareness, understanding, acceptance, and commitment. As a professional, I learned the importance of providing a clear vision, engaging stakeholders in meaningful conversations, and addressing potential concerns to facilitate a smooth transition. By employing strategic communication strategies, fostering a culture of trust and openness, and providing ongoing support, leaders can guide their colleagues through change, creating an environment that embraces innovation and continuous improvement.

My professional growth as a leader encompasses various facets, including the recognition and implementation of systems, the value of a functioning team, and understanding the change model for effective transformation. By embracing these components, educators can create an environment where creativity thrives, students flourish, and positive change becomes an integral part of the educational journey. As education continues to evolve, nurturing professional growth will remain essential for educators to adapt, innovate, and shape the future of learning.

Conclusion

The innovative concept of NOVUS, aiming to foster creativity, presented a thrilling opportunity to challenge and reframe the traditional educational paradigm. Researchers and educators have spoken about the need for school reform to better prepare students for the real world for decades. Schools are known to be the slowest to change and adapt to the changes that globalization and technological advances have had on society. Being part of a school attempting to break the traditional mold was exciting and daunting.

My role as an elementary school principal typically required the maintenance of existing school models, often leading to a discord between my professional duties and educational philosophy. Despite not viewing myself as intrinsically creative or innovative, I anticipated and embraced the potential for personal growth and the inevitable wave of fresh perspectives. My experience at NOVUS and conducting the case study led to a profound shift in my perception of education and instigated a process of self-discovery regarding my leadership competencies.

In this chapter, I reviewed the methodology and processes employed in my case study. I then presented and interpreted my findings, contextualizing them within the broader body of relevant academic literature and addressing the research questions. I also examined the implications for policy, practice, and future research. The dissertation culminates with a reflective analysis of my personal growth in leadership throughout the course of this study. Like any other industry, educational institutions must be responsive to the evolving world. Should creativity be truly appreciated, it is incumbent on educators to understand how to develop creative skills in students. However, for a change to last, leaders themselves must evolve to cultivate an adaptive and collaborative school culture. Regarding fostering creativity in educational settings, the pivotal element is not necessarily the leader's creativity but their ability to foster this quality within their school community.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL



EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 ΒροδψΜεδιχαλΣχιενγςσΒυδινγ•ΜαλΣτοπ 682
600 Μογς Βουλεπαρδ •Γ ρενπαλλε, NX 27834
Οφφγς 252-744-2914 •Φαξ 252-744-2284 •
rede.ecu.edu/umcirb/

□

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: [Mihoko Chida](#)
CC: [Matthew Militello](#)
Date: 12/12/2019
Re: [UMCIRB 19-001609](#)
IMPLEMENTING AND FOSTERING CREATIVITY: A CASE STUDY OF INTERNATIONAL ELEMENTARY SCHOOLS

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) occurred on 12/11/2019. The research study is eligible for review under expedited category # 6, 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a Final Report application to the UMCIRB prior to the Expected End Date provided in the IRB application. If the study is not completed by this date, an Amendment will need to be submitted to extend the Expected End Date. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
Chida Updated Consent Form_CHIDA.doc	Consent Forms
Email Text for Questionnaire_CHIDA.docx	Recruitment Documents/Scripts
InterviewProtocol_CHIDA.docx	Interview/Focus Group Scripts/Questions
IRB Proposal_CHIDA_24October2019.docx	Study Protocol or Grant Application
Observations Tool_CHIDA.docx	Interview/Focus Group Scripts/Questions
QuestionnaireProtocol_CHIDA.docx	Surveys and Questionnaires

For research studies where a waiver of HIPAA Authorization has been approved, each of the waiver criteria in 45 CFR 164.512(i)(2)(ii) has been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.



EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Βρόδψ Μεδιχαλ ΣχενγχεσΒυλδινγ • Μοαλ Στωπ 682
600 Μοψε Βοϋλεπαρδ • Γρεενβαλλε, ΝΧ 27834
Οψηχε 252-744-2914 • Φαξ 252-744-2284 •
rede.ecu.edu/umcirb/

□

Notification of Amendment Approval

□

From: Social/Behavioral IRB
To: [Mihoko Chida](#)
CC: [Matthew Militello](#)
Date: 12/22/2022
Re: [Ame4 UMCIRB 19-001609](#)
[UMCIRB 19-001609](#)
IMPLEMENTING AND FOSTERING CREATIVITY: A CASE STUDY OF INTERNATIONAL ELEMENTARY SCHOOLS

Your Amendment has been reviewed and approved using expedited review on 12/22/2022. It was the determination of the UMCIRB Chairperson (or designee) that this revision does not impact the overall risk/benefit ratio of the study and is appropriate for the population and procedures proposed.

Please note that any further changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a Final Report application to the UMCIRB prior to the Expected End Date provided in the IRB application. If the study is not completed by this date, an Amendment will need to be submitted to extend the Expected End Date. The investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Description

Extension of deadline needed to complete study. Expected finish date 30 June 2023.

For research studies where a waiver or alteration of HIPAA Authorization has been approved, the IRB states that each of the waiver criteria in 45 CFR 164.512(i)(1)(i)(A) and (2)(i) through (v) have been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB000003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418

APPENDIX B: CITI CERTIFICATION



Completion Date 24-May-2022
Expiration Date 23-May-2025
Record ID 47312191

This is to certify that:

Mihoko Chida

Has completed the following CITI Program course:

Not valid for renewal of certification
through CME.

Human Research

(Curriculum Group)

Group 2.Social / Behavioral Research Investigators and Key Personnel

(Course Learner Group)

2 - Refresher Course

(Stage)

Under requirements set by:

East Carolina University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w4b74b319-253b-414f-af46-25ed6b4d41f8-47312191

APPENDIX C: SITE CONSENT LETTER



INTERNATIONAL SCHOOL

October 22, 2019

To Whom It May Concern:

International School recognizes the benefits of participating in relevant, well-designed research studies proposed by qualified individuals. Approval for conducting such studies is based primarily on the extent to which substantial benefits can be shown for International School and its mission of educating students. The purpose of this letter is to notify you of the approval to use conduct your dissertation study titled, "Implementing and Fostering Creativity: A Case Study of International Elementary Schools" with participants in our schools. We also give permission to utilize the following spaces at International School to collect data and conduct interviews for this dissertation project.

The project meets all of our school guidelines, procedures, and safeguards for conducting research on our campus. Moreover, there is ample space for Mihoko Chida to conduct her study and her project will not interfere with any functions of International School. Finally, the following conditions must be met, as agreed upon by the researchers and International School:

- Participant data only includes information captured from the stated data collection strategies.
- Participation is voluntary.
- Participants can choose to leave the study without penalty at any time.
- Any issues with participation in the study are reported to the school administration in a timely manner.
- An executive summary of your findings is shared with the school administration once the study is complete.

In addition to these conditions, the study must follow all of the East Carolina University IRB guidelines.

We are excited to support this important work.

Respectfully,

Cameron Fox
Founding Head of School

APPENDIX D: PARTICIPANT CONSENT LETTER



Informed Consent to Participate in Research

Information to consider before taking part in research that has no more than minimal risk.

Title of Research Study: IMPLEMENTING AND FOSTERING CREATIVITY: A CASE STUDY OF INTERNATIONAL ELEMENTARY SCHOOLS

Principal Investigator: Mihoko Chida under the guidance of Dr. Matthew Militello
Institution, Department or Division: College of Education
Address: 220 Ragsdale, ECU, Greenville, NC 27858
Telephone #: (919) 518.4008

Participant Full Name: _____ Date of Birth: _____
Please PRINT clearly

Researchers at East Carolina University (ECU) study issues related to society, health problems, environmental problems, behavior problems and the human condition. To do this, we need the help of volunteers who are willing to take part in research.

Why am I being invited to take part in this research?

The purpose of this research is to study how creativity is addressed in international schools.

You are being invited to participate because you are either (a) an administrator at the participating international school, (b) a teacher at the participating international school, or (c) a parent of a student at the participating international school.

You are being invited to take part in this research because you are a healthy volunteer. The decision to take part in this research is yours to make. By doing this research, I hope to learn how international elementary schools design learning environments that foster creativity.

If you volunteer to take part in this research, you will be one of about 20 people to do so.

Are there reasons I should not take part in this research?

There are no known reasons for why you should not participate in this research study.

What other choices do I have if I do not take part in this research?

You can choose not to participate.

Where is the research going to take place and how long will it last?

The research will be conducted at your school. The total amount of time you will be asked to volunteer for this study is approximately two hours over the next year.

What will I be asked to do?

You will be asked to do the following:

If you agree to participate in this study, you may be asked to participate in one or more interviews and focus groups during the course of a year. Interviews and focus groups will be audio/video recorded. If you want to participate in an interview but do not want to be audio recorded, the interviewer will turn off the audio recorder. If you want to participate in a focus group but do not want to be video recorded, you will be able to sit out of field of view of the video camera and still be audio recorded.

Interview and focus group questions will focus on your reflections and experiences with regards to creativity. Some questions may include:

Observational notes may also be taken during meetings.

What might I experience if I take part in the research?

We don't know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We don't know if you will benefit from taking part in this study. There may not be any personal benefit to you but the information gained by doing this research may help others in the future.

Will I be paid for taking part in this research?

I will not be able to pay you for the time you volunteer while being in this study.

Will it cost me to take part in this research?

It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?

ECU and the people and organizations listed below may know that you took part in this research and may see information about you that is normally kept private. With your permission, these people may use your private information to do this research:

- Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.
- The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your welfare during this research and may need to see research records that identify you.

How will you keep the information you collect about me secure? How long will you keep it?

The information in the study will be kept confidential to the full extent allowed by law. Confidentiality will be maintained throughout the data collection and data analysis process. Consent forms and data from interviews will be maintained in a secure, locked location and will

be stored for a minimum of three years after completion of the study. No reference will be made in oral or written reports that could link you to the study.

What if I decide I don't want to continue in this research?

You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive.

Who should I contact if I have questions?

The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator at mihokochida@gmail.com.

If you have questions about your rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at phone number +1-252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director for Human Research Protections, at +1=252-744-2914.

I have decided I want to take part in this research. What should I do now?

The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:

- I have read (or had read to me) all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
- I know that I can stop taking part in this study at any time.
- By signing this informed consent form, I am not giving up any of my rights.
- I have been given a copy of this consent document, and it is mine to keep.

Participant's Name (PRINT)

Signature

Date

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above, and answered all of the person's questions about the research.

Person Obtaining Consent (PRINT)

Signature

Date

APPENDIX E: EXCERPT FROM CODE BOOK

[illegible]

APPENDIX F: QUESTIONNAIRE PROTOCOL

IMPLEMENTING AND FOSTERING CREATIVITY: A CASE STUDY OF INTERNATIONAL ELEMENTARY SCHOOLS

Questionnaire Protocol

Introduction

Thank you for taking time from your busy schedule to answer the following questions. I appreciate your willingness to participate in this online questionnaire.

My name is (Mihoko Chida) and I will be conducting this interview as part of my research as a doctoral student at East Carolina University. The questionnaire is part of my research about creativity and creative practices in international schools.

Disclosures:

- Your participation in the study is voluntary. It is your decision whether or not to participate and you may elect to include specific details, such as your name, role and school.
- All information collected will be kept confidential. Any information collected during the session that may identify any participant will only be disclosed with your prior permission. A coding system will be used in the management and analysis of this data with no names or school identifiers.
- The questionnaire will take approximately 15 minutes to complete.

Questionnaire Questions

1. How do you personally define creativity?
2. On a scale of 1-5, how would you rate your school with regards to the fostering of creativity?
3. Name 2-3 things you do to foster creativity in your school.
4. Does your school have a schoolwide definition of creativity? If so, what is your school's definition?
5. Does creativity appear in your guiding statements?
6. What challenges do you face in your role in developing a creative mindset or creative thinking skills?
7. In your opinion, what are some international schools that are innovative and fostering creativity in their students?
8. Would you be interested in following up? If so, please provide your name, role, school and contact information.

APPENDIX G: INTERVIEW PROTOCOL

IMPLEMENTING AND FOSTERING CREATIVITY: A CASE STUDY OF INTERNATIONAL ELEMENTARY SCHOOLS

Interview Protocol

Introduction

Thank you for taking time from your busy schedule to meet with me today. I appreciate your willingness to participate in this interview and will limit the time to one hour.

My name is (Mihoko Chida) and I will be conducting this interview as part of my research as a doctoral student at East Carolina University. The interview is part of my research about creativity and creative practices in international schools.

Disclosures:

- Your participation in the study is voluntary. It is your decision whether or not to participate and you may elect to stop participating in the interview at any time.
- The interview will be digitally recorded in order to capture a comprehensive record of our conversation. All information collected will be kept confidential. Any information collected during the session that may identify any participant will only be disclosed with your prior permission. A coding system will be used in the management and analysis of the data with no names or school identifiers associated with any of the recorded discussion.
- The interview will last approximately thirty minutes.

Interview Questions

TURN RECORDER ON AND STATE THE FOLLOWING:

“This is Mihoko Chida, interviewing (*Participant Code*) on (*Date*) for the Creativity Study.”

To begin the conversation, please introduce yourself and describe your role at your school.

1. How do you personally define creativity?
2. Does your school have a schoolwide definition of creativity? If so, what is your school’s definition?
3. How do parents perceive the role of creativity in their child’s education?
4. How does your school provide feedback to students about their creative thinking skills?
5. What challenges do you face in your role in developing a creative mindset or creative thinking skills?

